Submission

No 31

DRIVER AND ROAD USER DISTRACTION

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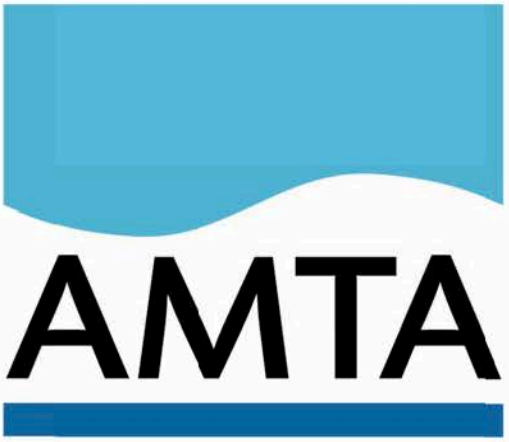

Australian Mobile Telecommunications Association

Industry Response

Driver and Road User Distraction Inquiry

27 April 2012

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1. Executive Summary

The Australian Mobile Telecommunications Association (AMTA), the peak industry body representing the mobile telecommunications industry, in this submission responds to the inquiry conducted by the New South Wales Parliamentary Joint Standing Committee on Road Safety into Driver and Road User Distraction

AMTA welcomes this opportunity to have input to the New South Wales Parliament's "investigation into distractions and their impact on the safety of drivers, passengers, cyclists and pedestrians". The mobile telecommunications industry devotes considerable time and resources in promoting safe and responsible use of mobile phones in vehicles. We are committed to promoting safe and responsible use of the industry's products and work with governments, road traffic authorities, police, motoring organisations and other key stakeholders to provide and promote practical information to assist drivers' safe use of mobile telecommunications devices.

This submission assesses the latest research on the nature and extent of mobile phones as a driver distraction, their impact on crash causalities and what are the most effective actions to reduce and minimise risks.

AMTA acknowledges the risks involved in the use of legal hands-free mobile phones, however, we believe that adhering to existing laws and common-sense practices can reduce those risks and allow drivers to use mobiles in a safe and responsible manner. We support the Staysafe Committee's aim to find sensible solutions to reduce the risks of distracted driving "... to ensure the safety of everyone travelling on NSW roads".

Despite the march of cutting-edge in-car technology and the potential for driver distraction, a sound age-old adage used since drivers got behind the wheel still applies: "Keep your eyes on the road". The obvious importance of this sound piece of advice has been further underscored recently by US naturalistic studies, which found the key to significantly improving road safety is keeping drivers' eyes on the road and that cognitively intense tasks, such as emotional conversations, while having a measurable impact in laboratory studies, have a much lower risk in real-world driving conditions.

Furthermore, mobile telecommunications technology is being developed at a rapid pace and can be harnessed to reduce potential distractions. For instance, modern smartphones do not require drivers to touch their phones to make a call and incorporate voice-activation functions, which allow drivers to keep their eyes on the road.

This submission also responds to the Committee's media release of March 6, 2012, which talks of driver distraction as a growing problem and poses the question: "But would more laws and personal restrictions be an overreaction or sensible and necessary?"

AMTA proposes that the Committee considers a new approach in addressing driver safety and mobile phones that is based on consistent and clear messages; technology neutrality; uniform and consistent national laws; focusing on the range of distractions and not just mobile phones; careful

consideration of all mobile phone tasks and not a blanket view that they all have the same risk profile; and a balanced approach to rapidly-changing technologies.

AMTA recommends that the Staysafe Committee consider:

- Targeting the clearly dangerous, illegal and unacceptable practice of text messaging and driving, which has been shown to have the highest risk factor with a 23.2 times greater risk of a crash or near crash in large commercial vehicles and a 3.3 times greater risk for teenage drivers, who have four times more crashes.
- Increased support, awareness and adoption of new national road rules requiring drivers to use their mobiles in approved cradles to help reduce the risk of reaching for objects in cars, which is shown to be 8.8 times more risky for adult drivers. This will also help ensure that drivers' eyes are looking at the forward roadway to reduce risks of taking their eyes off the road.
- Promotion of voice-activated, one-button or screen-swipe dialling and other technological solutions to reduce risks of drivers taking their eyes off the road when receiving or making calls.
- Providing consistent messages to make drivers aware of what they can and cannot do with their legal hands-free kit and when it is appropriate to use. AMTA makes it clear that legal hands-free use is not appropriate in all road and traffic situations.
- Adopting a strategy of telling drivers how they can use their mobiles safely instead of overstating the risk of talking and listening on mobiles in cars, which according to the latest real-life, in-car research methodology is manageable and not as risky as other common practices, such as reaching for objects in cars, handling a CD or eating.
- Being aware of unintended consequences of bans or restrictions, which would result in some drivers disobeying the law and using mobiles on their laps to avoid detection. This would increase the risk of a crash or near crash compared to drivers using mobiles in cradles in a safe and responsible manner.

2. Introduction

The Australian Mobile Telecommunications Association (AMTA) is the peak national body representing Australia's mobile telecommunications industry.

AMTA's members include carriage service providers, handset manufacturers, retailers, infrastructure suppliers and support industries.

Our vision is to promote an environmentally, socially and economically responsible, successful and sustainable mobile telecommunications industry in Australia.

AMTA aims to achieve its vision by:

- Effective industry representation and leadership
- Generating consensus on whole-of-industry issues
- Improving the level of trust between industry, related industries, key stakeholders and the wider community
- Promoting an improved understanding of the mobile telecommunications industry and its contribution to the Australian economy.

AMTA, on behalf of the industry, has a broad charter to not only promote innovative mobile telecommunications technologies building long-term business success, but also to maximise the beneficial impacts by engaging with the community.

Our industry takes measures to minimise the risks associated with the misuse of mobile technology. We believe the positive aspects far outweigh the negative. However, we are committed to providing practical advice to help prevent misuse and promote the safe, responsible and affordable use of mobile telecommunications.

The submission has been structured in the following way to address the terms of reference of the inquiry:

- The prevalence of mobile phone use while driving
- The impact of mobile phone use on fatalities and serious injury
- The relative impact of distractions on drivers
- The suitability and enforceability of solutions
- The false and dangerous comparisons with drink driving
- The role of legislation and driver education in reducing risks
- The inconsistent GPS usage rules across Australia
- Alternative approaches to encouraging responsible and safe driving
- Conclusions and recommendations

The issue of driver distractions is not new and has been of concern since the turn of the 20th century when cars became commonplace. In 1905 regulators were concerned about the hypnotic effect of windshield wipers. In the 1930s, the introduction of car radios had some road safety

experts warning of the carnage caused by drivers becoming engrossed in their favourite radio programs.

> ***A grave problem that developed in New Hampshire, spread to Massachusetts, and crept over to Albany, now has all the motor-vehicle commissioners of the eastern states in a wax. It's whether radios should be allowed on cars. Some states don't want to permit them at all - say they distract the driver and disturb the peace. The manufacturers claim that the sound of Rudy Vallee's voice is less disturbing than backseat conversation. Massachusetts leans toward the middle of the road. The commissioner there thinks the things should be shut off while you are driving, but that you should be allowed to take culture with you into the wilderness. The whole problem is getting very complex, but the upshot is that you'll probably be allowed to take your radio anywhere, with possibly some restriction on the times when you can play it.***[1]

The concern was justified because driver distractions have been found to be one of the main causes of accidents around the world. In the United States the National Highway Traffic Safety Administration (NHTSA) estimates that 20 to 30 percent of all fatal auto accidents occur, in part, because the driver is distracted.

Consequently, the mobile phone industry takes very seriously the issue of safe mobile phone use while driving. AMTA has consistently, through its driver education initiatives, advised drivers that: "Safety is the most important call you can make when driving". We have made it clear that although a hands-free mobile can reduce the physical effort to make or receive a call, drivers should also avoid making calls in heavy traffic or bad weather conditions and they should not engage in distracting, complex or emotional conversations (See Appendix A).

However, mobile phones are only one of the many distractions faced by drivers and all potential distractions must be considered.

The mobile telecommunications industry does not question that mobile phone use imposes physical, visual, and cognitive demands on drivers; however, we believe that by adhering to existing laws and some simple commonsense practices, all drivers can make safe use of mobile phones while enjoying the substantial public safety, personal security and productivity benefits they also provide.

While technology can help to address physical and visual demands of mobile phone use in vehicles, education is required to remind drivers not to be distracted by mobile phones while driving and to reinforce the current ban on hand-held use.

More importantly governments and law enforcement agencies have a key role to help to educate drivers about how to manage the many distractions they face, including legal hands-free mobile

[1] *67 Years Ago* -written by Nicholas Trott in 1930-as published in *The Farmers' Almanac*, 1995

phones use, rather than just promoting unenforceable and potentially dangerous self –imposed or legal bans which are too often suggested by law enforcement as the only solution.

The most useful action governments can take is to educate drivers, particularly learner drivers, about the appropriate and safe use of wireless communications products in vehicles.

AMTA has produced and widely disseminated its safe driving tips, which are designed to give drivers practical and up-to-date information on what to do and what not to do to help ensure they drive safely and responsibly when involved in legal mobile phone use.

Holden, Ford and Toyota have used AMTA's safe driving tips (see Appendix A) in their safety manuals. The Department of Finance and Deregulation has also used AMTA's driving tips for its 100-plus Government departments and agencies that use nearly 9000 vehicles across Australia.

AMTA has partnered with the Federal Minister for Infrastructure and Transport, Anthony Albanese, the peak motoring organisation, the Australian Automobile Association, and the Australian Local Government Association to promote safe driving messages at peak driving periods, such as Christmas – New Year.

AMTA has also joined V8 Supercar champion drivers, Jamie Whincup and Craig Lowndes, to promote safe and responsible driving messages to the public.

AMTA has promoted evidenced-based policy making by sponsoring the pioneer of new naturalistic driving studies, Dr Tom Dingus of the Virginia Tech Transportation Institute (VTTI) in the United States, to Australia to be the keynote speaker at last year's annual conference of the Australasian College of Road Safety.

AMTA partnered with the Federal Parliamentary Secretary for Infrastructure and Transport, Catherine King, and the Australasian College of Road Safety (ACRS) at Christmas 2011 to provide practical advice to drivers using their mobiles during the busy holiday period.

3. Prevalence of mobile phone use while driving

Often the prevalence of mobile phone use, particularly illegal hand-held mobile phone use, is over-estimated and is based on anecdotal evidence, poor open ended driver surveys or media speculation.

Many driver attitudinal surveys that are referred to are conducted by motor insurance companies to get media mentions and increase brand awareness and have little scientific value. They do not help to accurately assess the level of mobile phone use in Australia by drivers, because they are poorly designed and rarely distinguish between illegal and legal mobile phone use. These surveys aim to find alarming results to maximise media interest rather than meaningful results and we have deliberately not included these in the assessment of mobile phone prevalence.

However, well conducted driver questionnaires and observational studies of driver behaviour have been used to ascertain the prevalence of use of hand-held mobile phones while driving and these two approaches have led to vastly different estimates of use.

Observational Studies

The most recent Australian roadside observational survey of more than 20,000 Melbourne motorists in October 2006 conducted by the Royal Melbourne Hospital found that only 1.6 per cent of all drivers use a mobile phone illegally.

The number of Australian motorists who illegally use a mobile phone has remained relatively unchanged in recent years, despite a huge increase in the number of drivers who had access to a phone.

Lead researcher and Director of Emergency Medicine at the Austin Hospital, Professor David Taylor, said the results mirrored those collected during an earlier 2002[2] study.

"During the 36 hours of observation, 331 of 20,207 drivers screened (1.6%) were observed using mobiles... The absolute number of drivers observed using mobiles (331) was almost unchanged from that observed in 2002 (315)," Professor Taylor found.

Importantly, the researchers note that the rate of illegal mobile phone use while driving actually decreased, possibly due to education campaigns and increased enforcement.

"While it is encouraging that the overall rate decreased, this decrease was small. One important confounder is that it is likely that there were more mobiles within the vehicles observed during the 2006 survey. Indeed, over eight million mobile phone handsets were sold in Australia in 2005, more than double the figure in 2002.

"It is possible, therefore, that the opportunity for mobile use was increased in 2006 and that preventative initiatives have been more successful than our figures suggest," the report states.

[2]Taylor D McD, Bennett DM, Carter M, Garewal D. 'Mobile telephone use among Melbourne drivers: a preventable exposure to injury risk.' *Med J Aust* 2003; 179: 140-142.

This was also confirmed in a 2005 Australian study of drivers in Perth.[3]

These figures show there is a high level of compliance with the law when using mobile phones while driving in Australia.

Observational studies from around the world show figures from 1.6 to 6.0 per cent depending on whether or not mobile phone use is restricted and to what extent the restrictions are enforced.

Country	Percentage of hand-held mobile phone use while driving		
Australia	1.8% 2002[4]	1.6% 2006[5]	
Ireland	3.6% 2005[6]	2.3% 2007[7]	
Italy	1.8% 2004[8]	2.6% 2005[9]	2.5% 2005[10]
Spain	3.3% 2002[11]		
UK	1.7% 2006	1.0% 2006[12]	
USA	5.0% 2005	6.0% 2007[13]	

Table 1: Roadside observational studies around the world show hand-held mobile phone use depends on legal restrictions and how well they are enforced

The troublesome two per cent

Australia is not unique in the experience that a small percentage of drivers continue to use hand-held mobile phones despite laws restricting their use.

Following the introduction of laws in the state of New York making it a traffic violation to talk on a hand-held mobile phone while driving, the first such law in the USA, researchers observed a

[3]McEvoy SP, Stevenson MR, McCartt AT, Woodward M, Haworth C, Palamara P, Cercarelli R, 'Role of mobile phones in motor vehicle crashes resulting in hospital attendance: a case-crossover study' *British Medical Journal*, 2005;331:428

[4]Taylor DM, Bennett DM, Carter M, Garewal D.'Mobile telephone use among Melbourne drivers: a preventable exposure to injury risk.'*Med J Aust*. 2003 Aug 4;179(3):140-2.

[5]Taylor DM, MacBean CE, Das A, MohdRosli R.'Handheld mobile telephone use among Melbourne drivers.'*Med J Aust*. 2007 Oct 15;187(8):432-4.

[6] Bedford D, O'Farrell A, Downey J, McKeown N, Howell F. 'The use of hand held mobile phones by drivers.'*Ir Med J*. 2005 Nov-Dec;98(10):248.

[7]O'Meara M, Bedford D, Finnegan P, Howell F, Murray C.'The impact of legislation in Ireland on handheld mobile phone use by drivers.'*Ir Med J*. 2008 Jul-Aug;101(7):221-2.

[8]Lorini C, Bonaccorsi G, Mersi A, Baroncini O, Ciampi G, Boddi V, Santini MG, Comodo N. 'Mobile phone use while driving in Florence health district area.'*Ann Ig*. 2006 Jul-Aug;18(4):349-56. Italian

[9]Lorini C, Bonaccorsi G, Mersi A, Petrioli G, Postiglione M, Boddi V, Santini MG, Comodo N. 'Mobile phone use while driving in Fiorentine area: results of the new survey.'*Ann Ig*. 2007 May-Jun;19(3):275-80. Italian.

[10]Taggi F, Crenca A, Cedri C, Giustini M, Dosi G, Marturano P. 'Road safety and the tsunami of cell phones.'*Ann Ig*. 2007 May-Jun;19(3):269-74.

[11]Astrain I, Bernaus J, Claverol J, Escobar A, Godoy P. 'Prevalence of mobile phone use while driving vehicles.vehicles'. *Gac Sanit*. 2003 Jan-Feb;17(1):66-9. Spanish.

[12]UK Department of Transport Media Release, 4 December 2007 '40% cut in drivers breaking mobile phone law.law'

[13]*NHTSA Traffic Safety Facts, Driver Electronic device Use in 2007.* DOT HS 810 963, June 2008 National Center for Statistics and Analysis, 1200 New Jersey Avenue SE., Washington, DC 20590.

substantial short-term effect.[14] Hand-held use declined significantly from 2.3 per cent before the law to 1.1 per cent in the first few months after the law.

In Connecticut, an adjacent state with no such law, the usage rate of 2.9 per cent did not change significantly from before or after the law.

In a follow-up study[15] one year later, hand-held use was back up to 2.1 per cent.

The researchers concluded that vigorous enforcement campaigns accompanied by publicity are necessary to achieve longer term compliance. More importantly, they could not tell if the law had improved traffic safety or had led to increased usage of hands-free devices

Although observational studies show that the actual prevalence of hand-held mobile phone usage whilst driving is in the range of 1.6 to 6.0 per cent, this is considerably lower than the data from driver questionnaires.

Driver Questionnaires

A survey[16] of 750 mobile phone owners conducted by Telstra as part of its driver education program, 'Drive Safe Phone Safe', found that half (49%) of drivers had a hands-free kit in their car. A third of drivers (35%) made calls while driving at least once a week or more frequently and half (49%) of all drivers received calls while driving at least once a week or more frequently. A small number (4%) of drivers say they do not take or turn on their phone in their car. Interestingly, the most common way to make or receive calls reported by two thirds (63%) of drivers was to stop the car first. However, a small proportion (4%) of drivers said they did not know it was illegal to use a hand-held phone while driving.

Unfortunately this survey also found that although most drivers understood that it is illegal to read or send text messages while driving, young drivers were more likely to read and send text messages. The survey found 58 per cent of drivers aged between 17 to 29 years reported reading a text message and 37 per cent reported sending a text message while driving at some stage while driving.

One third (34%) of the same age group also felt it was safe to send a text message when stationary at traffic lights compared to only one fifth of all drivers (18%) who felt the same.

An annual Australian government survey – also referenced in the draft National Road Safety Strategy – found similar results. The latest survey of community attitudes to road safety[17] reported that 61% of drivers say they have used a mobile phone while driving.

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[14]McCartt AT, Braver ER, Geary LL. 'Driver's use of handheld cell phone before and after New York State's cell phone law' *Prev Med* 2003;36:629-35

[15]McCartt AT, GearyLL. 'Longer term effects of New York State's law on drivers' handheld cell phone use'*Injury Prevention* 2004;10:11–15.

[16] Telstra 'Drive Safe Phone Safe Survey' April 2004 (unpublished survey results)

[17]Petroulias, T, 2009. *Community Attitudes to Road Safety:2009 Survey report,* Road Safety Report 4, Department of Infrastructure, Transport, Regional Development and Local Government, Canberra.

However, the survey says this figures is "...an amalgam based on having ever made or received calls or text messages." This is like asking someone if they have ever lied. It provides no understanding of the extent of mobile phone use – is a driver doing this regularly or have they received a call only once in their total time driving? It also does not distinguish between legal hands-free use and illegal hand-held mobile phone use. Although the survey asked drivers 'Do you use a hands-free car kit?' none of the results for this question are shown in the government's report which would have been very useful in order to understand the extent of compliance with national road laws.

Consequently, the Federal Transport Minister's media release[18] promoting the report included the negative claim that "almost two-thirds of respondents (61 per cent) say they use their mobile phone while driving, despite a high level of awareness (87 per cent) that doing so increases their chances of being involved in crashes." This data could have included respondents who legally used mobile phones with a hands-free device or respondents who made or received a call only once in their driving life.

The claim also does not account for drivers who are aware of the risks, taking more care to follow the law and ensure they used their phone legally with a hands-free device and appropriately in the circumstances.

Therefore, data based on actual roadside observations of driver behaviours consistently shows that only two per cent of drivers in Australia are using hand-held mobile phones while driving at any time. Although this is both undesirable and illegal in Australia, it is not as prevalent as media reporting or poorly constructed attitudinal surveys suggest.

Almost all Australian drivers also have a clear understanding of the national law restricting hand-held mobile phone use and in most cases they attempt to make phone calls while driving in a responsible manner.

[18] Media Release The Hon Anthony Albanese MP, Minister for Infrastructure, Transport, Regional Development and Local Government 'Road Safety: Motorists Must Heed the Warnings' 17 January 2010 AA009/2010 www.infrastructure.gov.au/roads/safety/publications/2010/community_att_09.aspx

4. The impact on fatalities and serious injury

There is a large body of research into driver distractions that shows mobile phones are only one of many distractions faced by drivers. However, considered in isolation, the potential negative effect of mobile phone use by drivers on traffic safety has long been recognised.[19][20]

Since 1997 a Canadian analysis of nearly 700 drivers, who had mobile phones and were also involved in crashes, appeared to implicate mobile phone conversation in increased crash risk.[21] This study, more than any other, is responsible for concern about the use of mobile phones and driving. The study shows a fourfold association within a ten-minute window between the use of mobile phones and minor non-injury causing crashes. The study found no difference between older and younger drivers or drivers of different genders. However, the study had several elements that required clarification and further research before it could be relied on as a basis for policy making.

The paper uses a technique commonly used in epidemiology– the case cross-over method – when investigating health effects where a population is exposed to a risk factor. However, some researchers[22] have been critical of this methodology because it relies on an unrepresentative sample of drivers who were recently involved in a crash. It is possible such drivers represent only risk-prone drivers and not all drivers on the road.

In support of this view, the same researchers recently found in a study[23]of 7,268 drivers that handheld mobile phone users are actually more likely to crash even when not on the phone. Conversely, drivers who are more likely to use hands-free devices are more careful drivers even without them.

An earlier study[24] of collision records of 3,869 drivers who used mobile phones and drivers who did not use a mobile phone while driving also found phone users had a higher risk of a crash which was not related to inattention. The violation pattern of mobile phone users suggested they are in general riskier drivers and reflected lifestyle, attitude and personality factors.

In addition, other researchers have raised concerns that the lack of precision about the time of the crash in the 1997 Canadian study may mean that the mobile phone call was placed after rather than before the crash. Of course, a call immediately after a minor collision is more than likely to inform loved ones, insurers or authorities.

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[19]Serafn, C.P., Wen, C.Y., Paelke, G.M. and Green, P., 'Car phone usability: a human factors laboratory test.' *Proceedings of the Human Factors and Ergonomics Society*, Vol 37, 1993, pp 220

[20] Goodman, M.J., Bents, F.D., Tijerina, L., Wierwille, W., Lerner, N. and Benel, D. 'An investigation of the safety implications of wireless communications in vehicles' U.S. Department of Transportation, National Highway Traffic Safety Administration, Washington DC 1997

[21]Redelemeier, D.A. and Tibshirani, R.J., 'Association between cellular-telephone calls and motor vehicle collisions' *New England Journal of Medicine*, Vol. 336, No. 7, Feb. 1997, pp 453-458

[22] Hahn, Robert, and James Prieger, '"The Impact of Driver Cell Phone Use on Accidents,",' *Advances in Economic Analysis & Policy*, Vol. 6, No. 1, 2006.

[23]Prieger, James and Robert Hahn, 'Are Drivers Who Use Cell Phones Inherently Less Safe?' *AppliedEconomics Quarterly*, Vol. 53, No. 4, pp. 327-352, 2007.

[24] Wilson, Jean, and Ming Fang, and Sandra Wiggins, and Peter Cooper, 'Collision and Violation Involvement of Drivers Who Use Cellular Telephones,' *Traffic Injury Prevention*, Vol. 4, No. 1, pp. 45-52, 2003.

However, recent Australian research[25] on the role of mobile phones in crashes replicated the overall results of the earlier Canadian research. The research conducted by The George Institute for International Health, University of Sydney, Injury Research Centre and the University of Western Australia looked at 456 drivers over the age of 17 who owned and used mobile phones and had been in road crashes resulting in hospital attendance between April 2002 and July 2004. The study also found a driver's use of a mobile phone in the 10 minutes before a crash was associated with a fourfold increased likelihood of crashing.

Optus, Telstra and Vodafone provided mobile phone call records of consenting participants in the study. The research was independently funded by the Insurance Institute for Highway Safety.

The research also found no significant safety difference when using a hands-free phone device, although this research was not sensitive enough to detect relatively small differences in safety. Following the publication of this paper the mobile industry put out a press release (see Appendix B) advising drivers that using a hands-free device while driving was not on its own a guarantee of safety.

It is also important to note that the study found almost all drivers followed the legal requirement to use a hands-free device with only two per cent of drivers illegally using hand-held phones. This also confirmed the results of the earlier observational study of Melbourne drivers.

Another epidemiological study[26] investigated the risks of using a hands-free device with voice activation. The popular device used in the United States called 'OnStar' is built into vehicles and allows hands-free voice activated calls. The device also automatically places an emergency notification call to a call centre if the vehicle was involved in a crash in which its airbag deployed.

OnStar collects the exact time and duration of all hands-free calls and airbag notifications. In 30 months of naturalistic driving, there were 91 million hands-free calls from an average of 323,994 drivers per month and 14 airbag deployments in 276 million driver-minutes of hands-free conversation.

The study found that hands-free calls amongst nearly 3 million OnStar subscribers actually lowered crash risk to 0.62 (i.e. had a protective effect) compared to driving without making a call. These results are not consistent with the large increase in crash risk reported in earlier epidemiological studies using the case-crossover method.

Furthermore, when mobile phones are involved in accidents they are more likely to be non-fatal, rear-end collisions than any other type of accident as was shown by the comparison of 452 mobile

[25]McEvoy SP, Stevenson MR,McCarttAT, WoodwardM, HaworthC, Palamara P, Cercarelli R, 'Role of mobile phones in motor vehicle crashes resulting in hospital attendance: a case-crossover study' *British Medical Journal*, 2005;331:428

[26] Young, Richard, and Christopher Schreiner, 'Real-World Personal Conversations Using a Hands-Free Embedded Wireless Device While Driving: Effect on Airbag- Deployment Crash Rates,' *Risk Analysis*, Vol. 29, No. 2, pp. 187-204, 2009.

phone-related accidents with 1.1 million non-mobile phone- related accidents in North Carolina from 1 January 1996 to 31 August 2000.[27]

Crash and fatality data

Data from on-road use indicates that mobile phones do not contribute significantly to crashes or fatalities.

A study [28] that analysed more than eight million actual hands-free phone calls placed over a period of five years found only two confirmed cases of crashes that occurred during phone use.

Some state highway authorities in the US have compiled detailed information on crash statistics and have specifically listed using a cell phone or two-way radio as a contributing cause for the crash. For example, in Minnesota in 2007 "Driver on Cell Phone or CB Radio" accounts for some 0.2% across single or multiple vehicle crashes across all age groups[29]. The Tennessee Department of Safety[30] has data available from 2003 to 2007 using a "Telephone or Two-Way Radio", which listed these factors as the cause of an accident in 0.35% in 2003; 0.32% in 2004; 0.36% in 2005; 0.37% in 2006 and 0.33% in 2007.

In the USA, alcohol is a factor in approximately 41 per cent of all fatal traffic crashes and in six per cent of all crashes.[31][32] In comparison, data collected by state highway authorities shows mobile phones have been a factor in an estimated one half of one per cent of all crashes and they are more likely to be a minor, rear-end collision.[33]

If using mobile phones is significantly dangerous then we could expect to see a dramatic increase in traffic accidents in the last decade. In fact, the reverse is true. In Australia road fatalities have continued to decline and correlate with major road safety initiatives, such as the introduction of laws to enforce seatbelt wearing, the introduction of random breath testing and a mandatory 50km speed limit in residential areas.

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[27] Stutts J, Huang H, Hunter W. 'Cell Phone Use While Driving in North Carolina: 2002 Update Report.' The University of North Carolina Highway Safety Research Center, 2002.

[28] Young, R., 'Association between embedded cellular phone calls and vehicle crashes involving airbag deployment.' *Proceedings of the First International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design*, Aspen CO, 2001, pp 390-400

[29] Minnesota Dept. Public Safety, Office Traffic Safety, Motor Vehicle Crash Facts 2007 available at http://www.dps.state.mn.us/ots/crashdata/2007CFacts/CF07-1-General.pdf

[30]Tennessee Department of Safety Crash Data available at http://www.state.tn.us/safety/stats/CrashData/default.html

[31] A Public Information Fact Sheet on Motor Vehicle and Traffic Safety Published by the National Highway Traffic Safety Administration's NationalCenter for Statistics and Analysis. Available at: http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2002/2002alcfacts.pdf (accessed Sep 2003).

[32]NTSA 2002 *Annual Assessment: Motor Vehicle Traffic Crash Fatality and Injury Estimates for 2002.* Available at: http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/Rpts/2003/Assess02BW.pdf (accessed Sep 2003).

[33]Stutts J, Huang H, Hunter W. *Cell Phone Use While Driving in North Carolina: 2002 Update Report.* The University of North Carolina Highway Safety Research Center, 2002

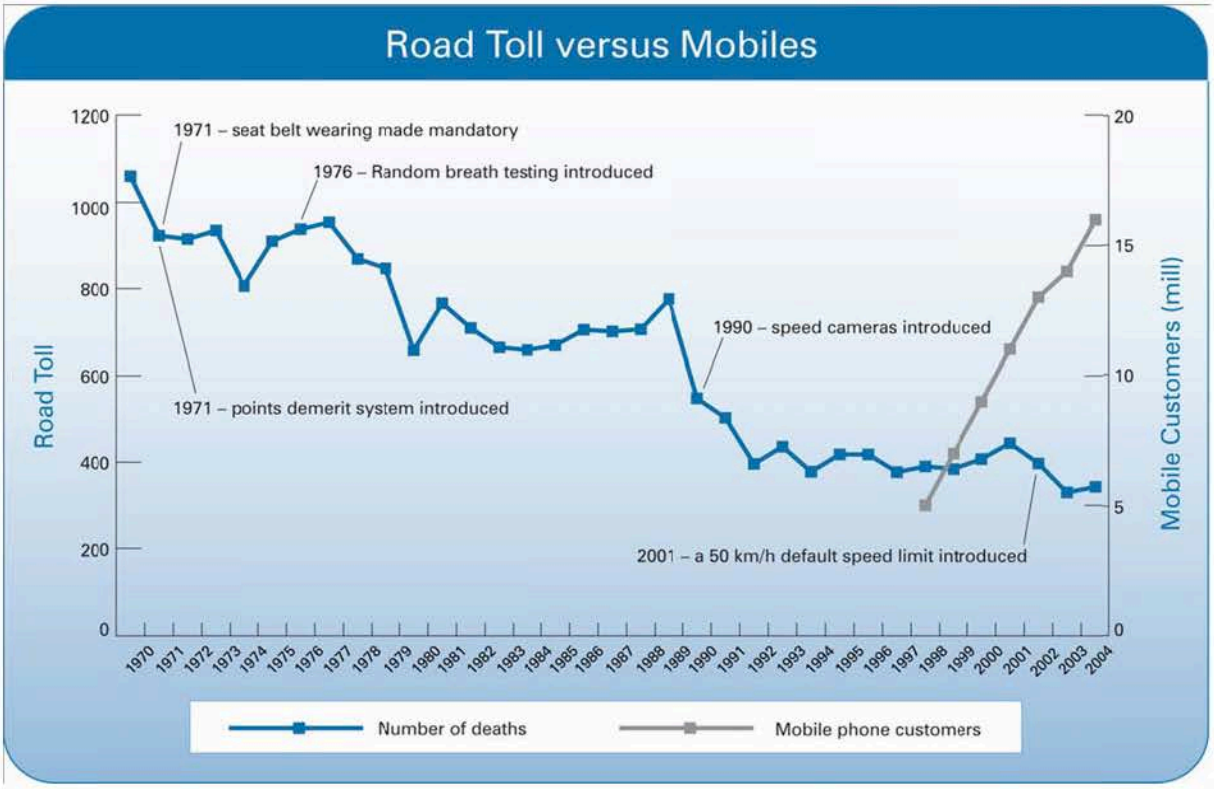

Figure 1: Despite the exponential growth in mobiles the road toll continues to decline in line with major road safety initiatives

Most Australians own mobile phones which, with the exclusion of young children and the elderly who tend not to own mobiles, would include almost all drivers. The road fatality reduction has continued despite the exponential rate of mobile phone ownership.

Another important point about the increasing use of mobile phones while driving in recent years - despite the decline in the road toll - is that the dramatic increase in use of mobiles also increases the chance of a fatal crash occurring when a driver is using a mobile phone and this may or may not be a causal association.

It is often argued that the lack of crash data related to mobile phones is due to under reporting of the crash cause by drivers and the police, therefore, the potential risk is being understated. However, police have been collecting data for some time now in some states of Australia.

For example, the Road Traffic Authority maintains a publically available database of annual crash statistics in New South Wales, which includes reports from 1997 to 2010. All these reports include figures on the possible contribution of mobile phones in crashes. More importantly, the data specifically records crashes in which 'using hand-held telephone' are a possible contributor to the crash.

In this period there are around 50,000 crashes each year on NSW roads and less than 0.1 per cent of all crashes are related to illegal hand-held mobile phone use.

Year	Crashes for 'Using a hand-held telephone'	Total Crashes	Percentage of all Crashes
1997	16	50120	0.03
1998	32	52578	0.06
1999	51	52866	0.10
2000	43	52914	0.08
2001	50	51814	0.10
2002	32	50448	0.06
2003	23	49266	0.05
2004	30	47310	0.06
2005	20	45554	0.04
2006	19	45528	0.04
2007	26	45395	0.04
2008	27	42833	0.06
2009	31	42952	0.07
2010	56	60084	0.09

Table 2: Illegal hand-held mobile phone use is a contributing factor in less than 0.1 per cent of all crashes in NSW from 1997 to 2010

Between 1997 and 2010 seven fatalities have been recorded in which using a hand-held mobile phone was a possible contributing factor. However, it is not known to what extent other factors such as alcohol, speed and fatigue also contributed to these fatal crashes. AMTA would welcome a review of the crash reports related to these fatalities so that we can fully understand the cause of the crashes and improve our safety advice to consumers.

Unfortunately, the media often focus on crashes which involve mobile phones and do not highlight that a driver may have also been speeding or drunk. For example, in 2004 the *Northern Territory News* ran an article[34] headlined "Text message driver crashes" which reports on a 34-year old woman who hit a pole and rolled her car while illegally trying to drive and write a text message. However, buried in the article was the added fact that she later returned a blood alcohol level of 0.149. The same article describes another driver who was using a mobile phone, but was also speeding by more than 15km/h over the limit on an expired learners permit and was not wearing a seatbelt.

[34] Northern Territory News, 21 May 2004, 'Text message driver crashes'

In 2009[35] alcohol was a contributing factor in 59% of fatal crashes on Thursday, Friday and Saturday nights and 24% of all crashes in NSW. Crashes which involved speeding represented at least 45% of fatal crashes and 17% of all crashes. Fatigue was assessed as being involved in at least 18% of all fatal crashes. At least 21% of motor vehicle occupants killed were not wearing available seatbelts.

Clearly there is a huge disparity in the figures in this report between the contribution to fatalities and crashes for illegal hand-held mobile phone use and much more dangerous driver behaviours such as drunk driving, speeding, not wearing seatbelts and fatigue. However, in early 2010 the 'Daily Telegraph' ran a campaign[36] – 'I promise to drive safely' –in partnership with the RTA and with the full support of NSW Police which asked drivers to promise not to use their mobile phones while driving. The campaign highlighted mobile phone use as one of the five key promises along with drink driving, speeding, seatbelts and fatigue.

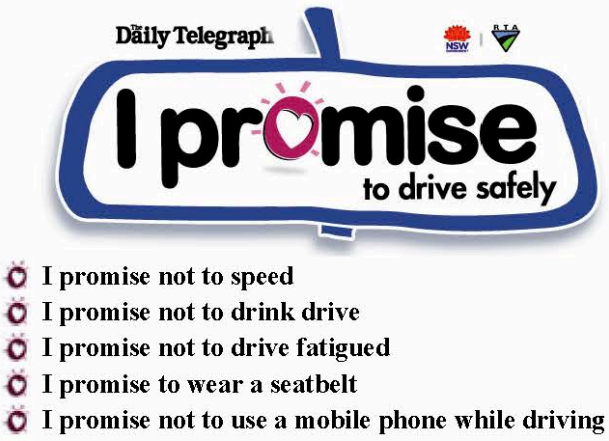

Figure 2: Mobiles are linked to fatal road safety risks without any substantial evidence to support the link

The argument that police and drivers may be under-reporting the involvement of illegal mobile phone use is unlikely in more recent times due to the high level of media interest in this issue, yet the data in NSW shows a consistent trend of a minor involvement in all crashes.

Some researchers have also argued there is the potential for a reporting bias by police who may over-report the involvement of mobile phones in crashes[37]. There have been a number of media reports in Australia of regional traffic police claiming mobile phones in unusually large numbers of fatalities and on further investigation they had provided figures to the media of the presence of a mobile phone in the vehicles involved in fatalities.

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[35] Road traffic crashes in New South Wales 2009 (accessed Jan 2010) http://www.rta.nsw.gov.au/roadsafety/downloads/crashstats2009.pdf

[36] 'A simple promise we can all make - help reduce our road toll' *The Daily Telegraph*March 18, 2010

[37]McCartt, Anne, and Laurie Hellinga, and Keli Bratman, 'Cell Phones and Driving: Review of Research,' *Traffic Injury Prevention*, Vol. 7, No. 2, pp. 89-106, 2006

For example, in 2003 the Toowoomba *Chronicle*[38] announced a police blitz on hand-held mobile phone use "...in an effort to reduce statistics which include 11 deaths in Toowoomba due to using mobile phones while driving" .

"Department of Transport statistics show 308 accidents have been caused in Toowoomba district by motorists using hand-held mobile phones and 11 of those have been fatal," Senior Sergeant Gav Williams told the *Chronicle*.

However, AMTA followed up on these alarming crash and fatality statistics in the Toowoomba police district with the Queensland Department of Transport and found the 308 crashes and 11 fatalities related to crashes in which a mobile phone was present in the vehicle.

Official statistics taken from the Department's Road Crash Database over seven years from 1997 to 2003 reported none of the 11 fatalities were linked with mobile phones and three of the 308 crashes had a mobile phone reported as a contributing cause.

It is our experience that there is a clear tendency for police to overstate the impact of mobile phones on crash statistic rather than to under-report their involvement in crashes.

A four-year study[39] published recently, by Saurah Bhargava of the University of Chicago and Vikram Pathania of the London School of Economics, did not find a correlation between the rise in mobile phone use and the rate of car crashes, despite their initial hypothesis.

The group expected a rise in crash rates to correlate with the increase in mobile phone use at 9pm when phone plans shifted to cheaper or free calls, but they found no correlation.

Using data from a major mobile phone carrier on up to 440,000 calls made from Californian drivers during an 11-day period in 2005, the researchers were able to separate drivers from other users by filtering for calls that switched among mobile phone base stations.

Their earlier research showed that when cell phone companies had cheaper call rates from 9pm on Monday through Thursday nights calling increased. The economists matched their calling data with crash reports for just before and just after 9pm when they could prove calls from drivers on the road increased and found no significant increase in crashes. When they expanded their scope to additional years and nearby states there was still no rise in crashes due to the increased mobile phone use while driving.

> ***Our analysis of the expanded set of states for 2002 to 2005, as well as for just 2005, allows us to reject, with a 95% confidence interval, any relative rise in crashes larger than 1.0% and 1.2% respectively.***

[38] *Chronicle* (Toowoomba) 'Police blitz to fall heavily on drivers using mobile phones' 22nd October 2003, page 3

[39] Bhargava S, Pathania V. 'Driving Under the (Cellular) Influence' *Am. Econ. Assoc.Annu. Meet. Pap.* 2011; 2011(pdfid 182): 1-61

Still Bhargava and Pathania caution against using the study as evidence that driving while talking on a cell phone is not at all dangerous, concluding that drivers who are aware of the added risks might drive more carefully:

> ***We note that this research does not imply that cell phone use is innocuous. It simply implies that current cellular use by drivers does not appear to cause a rise in crashes. It is possible that drivers who use such devices compensate for the added distraction by driving more carefully. Alternatively, it could be that risk-loving drivers may treat cell phones as a substitute for other, equally debilitating, distractions. Finally, because we measure an average treatment effect, it could be that cell phones are dangerous for certain drivers or driving conditions, and are countervailingly beneficial for others.***

Another recent study[40] which used actual data on mobile phone ownership and fatalities across all 50 states of the USA and then analysed the effects of hands-free laws where they are in effect – such as Washington, D.C., New York, New Jersey, and Connecticut – found no link to crashes, except in bad weather conditions. The study author speculated about the reasons for the results:

> ***It may be that drivers in states with hands-free laws are shifting their talking minutes to when they are not driving...***
>
> ***It could be that drivers find hands-free technology more cumbersome... (or that) the law in itself serves as an educational warning about the danger of talking on the phone while driving ... (or) that hands-free technologies do reduce the physical distraction of using a phone, and earlier studies failed to detect this effect.***

The added risk of bad road and weather conditions are specifically addressed in AMTA safety tips (see Appendix A.)

In conclusion, crash data does not indicate that mobile phones are a significant causative factor in serious injury or fatal accidents around the world or in Australia, but more comprehensive data collection and research is needed before further restrictions could be justified, if at all.

[40]Kolko, Jed, 'The Effects of Mobile Phone and Hands-Free Laws on Traffic Fatalities,' *The B.E. Journal of Economic Analysis and Policy*, Vol. 9, No. 1, Article. 10, 2009

5. Mobiles are one of many driver distractions

Although driver inattention contributes to around a third of all accidents[41], when the cause of distracted driver accidents is reviewed in more detail it is clear that mobile phones are not the main cause.

There is now a large body of research in driver distractions that shows mobile phones are only one of the many distractions faced by drivers.

A study[42] of 9000 Norwegian drivers, who had recently reported an accident to their insurance company, responded to a postal questionnaire about mobile telephone use and other driver distractions during the accident. Mobile phone use during the accident was reported by 0.66 per cent of guilty drivers and 0.30 per cent of innocent drivers. Mobile phones were estimated to be used in 0.86 per cent of the accidents. The number of accidents during mobile phone use was too low for significant differences between hands-free and hand-held telephones to be observed. However, rear-end collision was found to be the most frequent accident type when using a mobile phone. Interestingly, the study found both radios and CD players cause more accidents than mobile phones.

Australian research, conducted by Monash University's Accident Research Centre (MUARC), also found the effects of distraction were more pronounced during car stereo tasks than during hands-free mobile phone tasks.[43].

Similarly, a 1993 study[44] by the University of Michigan's Transportation Research Institute found changing cassette tapes to be more distracting than talking on a mobile phone. Reading a map, which was found to be the most distracting task, was nearly twice as distracting.

Spilling hot coffee and dropping something on the floor were two of the distractions drivers cited most frequently as reasons for their road traffic accidents, according to a study[45] by the Network of Employers for Traffic Safety (NETS). Fiddling with a radio or climate control system is the next

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[41] Wang J-S, Knipling RR, Goodman MJ. 'The Role of Driver Inattention in Crashes; New statistics from the 1995 Crashworthiness Data SystemSystem', *Proceedings of the 40th Annual Meeting of the Association for the Advancement of Automotive Medicine* (Presented August 1996) October 7-9, 1996, Vancouver, British Columbia

[42] F Sagberg"'Accident risk of car drivers during mobile telephone use,",'*International Journal of Vehicle Design* 26 (1), 2001, Special Iss. SI pp. 57-69, reported (from the abstract)

[43] National Roads and Motorist's Association (NRMA) News Release 'Driving: Car Stereos more distracting than hands–free calls' 25 September 2003. Available at: http://www.mynrma.com.au/member_centre/corporate_profile/media_centre/media_release.asp?mediaID=74 (accessed Sep 2003).

[44] Serafin C. Wen C,Paelke G, Green P, 'Car phone usability: a human factors laboratory test, 'Michigan University, Ann Arbor, Transportation Research Institute, Human Factors Division., 5 p. *Human Factors and Ergonomics Society., 37th Annual Meeting., Designing for Diversity. Proceedings, Volume 1*, Santa Monica, Human Factors and Ergonomics Society 1993; 220-224

[45] Network of Employers for Traffic Safety (NETS) Aug 16-19, 2001 survey released at a 1:00 pm news conference in the Murrow Room, at the National Press Club, WashingtonDC, Sep 10, 2001. Available at: http://www.trafficsafety.org/news/91001.html (accessed Sep 2003).

most-cited distraction. The study also found that some commuters regularly read the newspaper, shave, or apply make-up on their way to work.

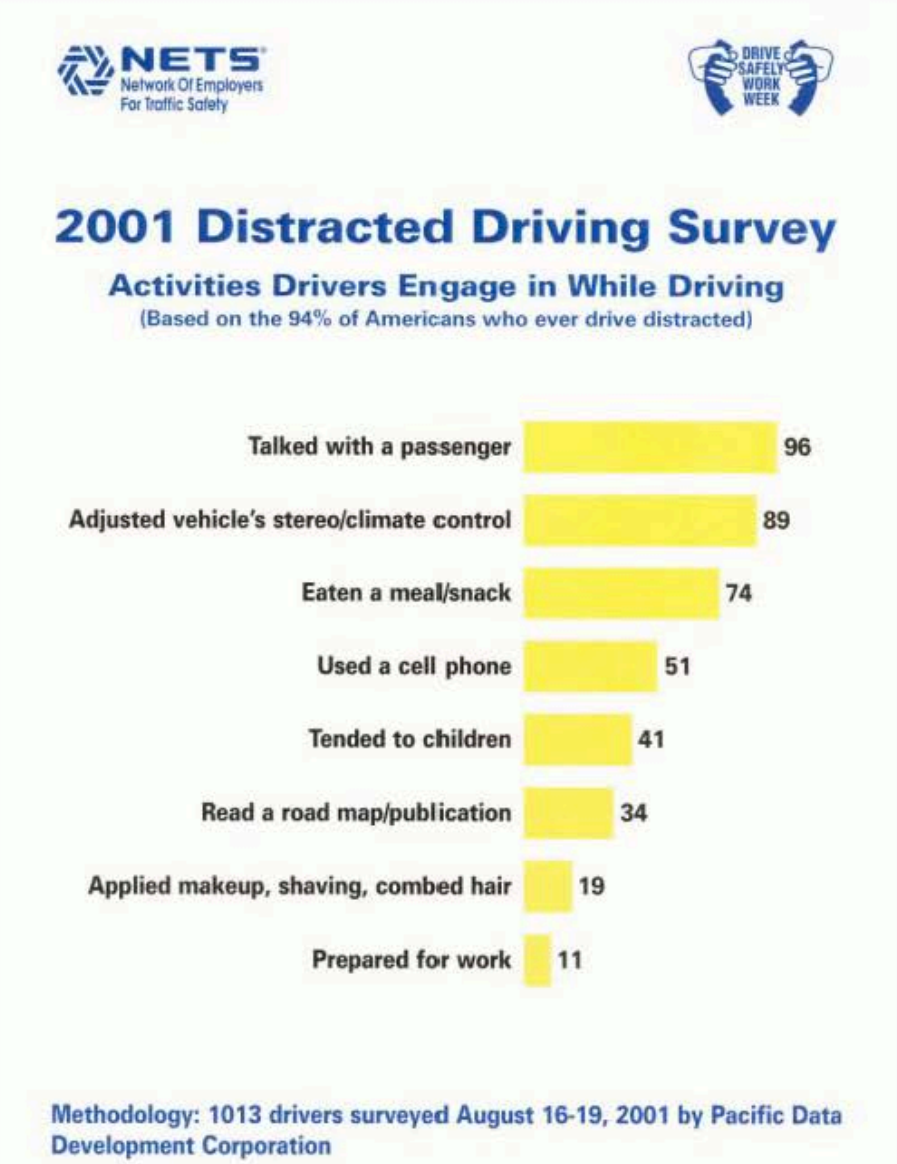


Figure 3: Mobiles are one of many potential distractions faced by drivers

The NHTSA estimates that over 150,000 crashes each year in the United States are related to driver distraction from interaction with vehicle entertainment systems[46]. However, most drivers consider their radios and CD players as reasonably safe and accept the responsibility for interacting with them.

[46]NHTSA. 'Traffic Safety Facts 1999: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System.' Washington, DC: NHTSA, December 2000.

A study[47] of more than 2,700 crash scenes involving distracted drivers and nearly 4,500 drivers by the Virginia Commonwealth University found looking at traffic, crashes and roadside incidents was the primary distraction in 16 per cent of the crashes studied, followed by driver fatigue, 12 per cent; looking at scenery, 10 per cent; passenger and child distractions, nine per cent; and adjusting the radio, CD or tape player, seven per cent. Mobile phones were cited as the primary distraction in slightly more than five percent of the crashes studied. Distractions inside the vehicle accounted for 62 percent of all the crashes studied.

An earlier American Automobile Association (AAA) study[48] analysed more than 32,000 traffic accidents caused by various driver distractions and found mobile phones contributed to less than two per cent of accidents, while an outside object, person or event contributed to more than 29 per cent. Adjusting the radio or CD contributed to more than 11 per cent of accidents. Drivers need to be aware of all possible distractions because they are a leading cause of accidents, but in this study only a small percentage involve a mobile phone.

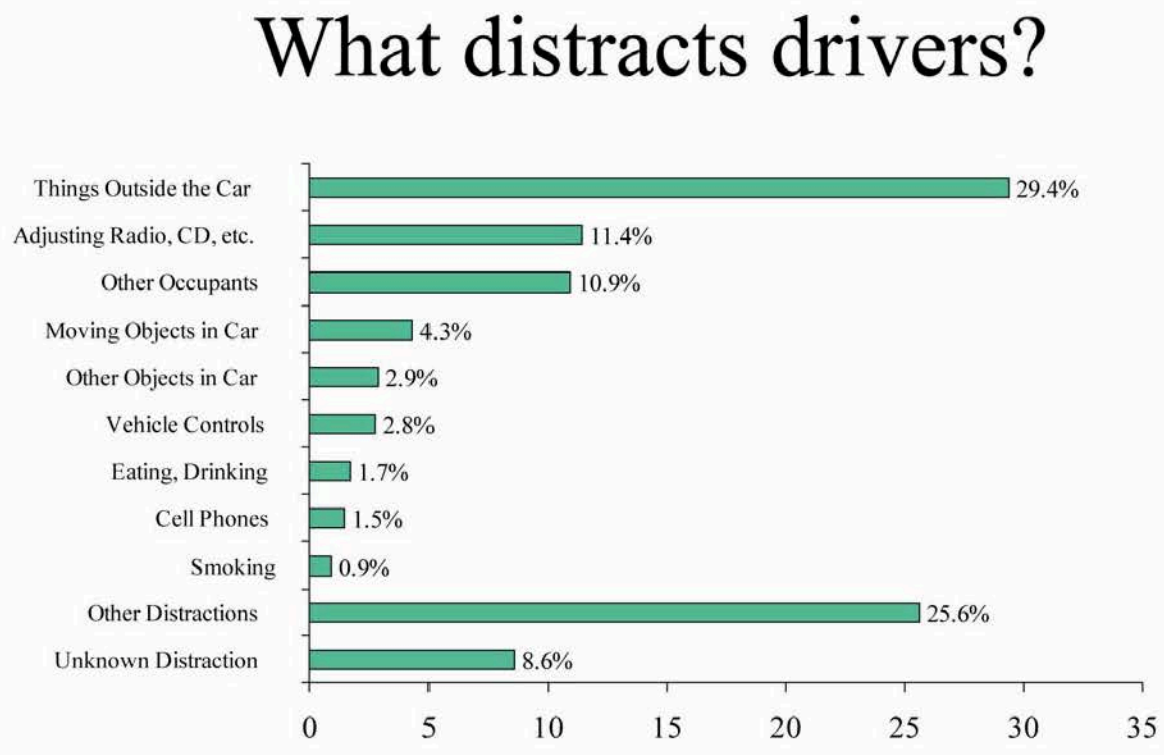


Figure 4: Drivers need to be aware of all possible distractions

In a follow-up study[49], the AAA found all drivers engage in some kind of distracting activity while they are driving. The most common distractions were reaching, leaning, looking for or picking up

[47] Ellis JM, Glaze AL. Pilot Study of Distracted Drivers. Survey and Evaluation Research Laboratory Centre for PublicPolicyVirginiaCommonwealthUniversity January 2003. Available at: http://www.vcu.edu/uns/Releases/2003/march/DistractedReport.pdf(accessed Sep 2003).
[48]Stutts J, Reinfurt D, Staplin L, Rodgman E. *The role of driver distraction in traffic crashes 2001.*
[49]Stutts J, Feaganes J, Rodgman E, Hamlett C, Meadows T, Reinfurt D, Gish K, Mercandante M, Staplin L. *Distractions in everyday driving 2003*

a purse, sunglasses, glove-compartment contents, toll-booth change or other objects; working with radio and music-system controls; eating and drinking; talking to passengers; personal grooming; coping with unruly children or other passenger disturbances; and even reading or writing while driving.

Some distractions seem particularly hazardous, such as the women observed putting on their makeup with both hands, and drivers putting in eye drops, trying to control the steering wheel with their knees, the study found.

In the first study of its kind, researchers used in-car video cameras to see how drivers behaved when they were behind the wheel of their own cars. All drivers were observed changing air conditioning or electric window controls (100.0%) and almost all were observed reaching for objects inside their moving vehicles (97.1%). Nearly as many changed the cars audio controls (94.1%) or were distracted by something outside the vehicle (85.7%). Approximately three quarters ate or drank something while driving (71.4%) or conversed with a passenger (77.1%). Reading, writing and personal grooming activities were relatively common, but less than half of the drivers did this while the vehicle was moving (45.7%). About a third of drivers used mobile phones while driving (30.0%) and nearly as many were distracted by an adult in the vehicle (22.9%).

Also, taking into account the shorter amount of time that children and especially babies were carried in vehicles, children were about four times and babies almost eight times more likely than adults to be a source of distraction to the driver.

These results reinforce the conclusion that mobile phone use is far less of a risk than tasks routinely performed behind the wheel.

In response to the study the AAA announced they would lobby state motor-vehicle agencies to include in their drivers' manuals a model section it has developed on distractions that includes tips on how to avoid such hazards. The AAA also distributed a public-service TV advertisement nationwide, modifying an ad already in use by the Auto Club of Southern California.

Despite the widespread ownership of mobile phones in the USA, only 28 of the 70 drivers were videotaped using phones while driving during the one week period of the study. When announcing the AAA study results Jane Stutts, a researcher at the University of North Carolina Highway Safety Research Center, said:

> ***Cellphones didn't show up as the major distracter, either in crash analysis or in this study.***

Naturalistic studies now provide more detailed insights

More recent naturalistic studies, which use in-car cameras and sensors, have been able to tease out the relative risks of each element of using a mobile phone while driving.

The largest real life study conducted for the US Department of Transport is the 100-Car Naturalistic Study. It investigated driver secondary tasks and vehicle events for more than a year resulting in nearly three million kilometres or 43,000 hours of driving data.

This study involved 82 crashes, 761 near crashes and 8,295 other incidents, such as evasive manoeuvres. The study and its follow-on analysis were co-sponsored by the National Highway Traffic Safety Administration (NHTSA), the Virginia Transportation Research Council, the research division of the Virginia Department of Transportation (DOT).

It found wireless devices (primarily mobile phones, but also including PDAs) were the most common distraction faced by drivers, followed by passenger-related inattention.

An analysis[50] of the naturalistic 100-car research by the Virginia Tech Transportation Institute (VTTI) found dialling a mobile while driving had was 2.8 times higher chance of a crash or near crash than non-distracted driving and reaching for a moving object, such as a phone, was 8.8 times riskier.

This compared to a 3.1 times higher risk when some drivers applied makeup or a 3.4 times higher risk when they read something, such as a map or directions, when driving.

However, in this analysis the odds ratios for talking and listening to a mobile phone or handling a CD, eating and drinking were not significantly different from baseline driving.

Type of Inattention	OR	Confidence Level
Reaching for moving object	**8.8**	**2.5 to 31.2**
Reading	3.4	1.7 to 6.5
Dialling Hand-held Device	**2.8**	**1.6 to 4.9**
Applying Make-up	3.1	1.3 to 7.9
Handling CD	2.3	0.3 to 17.0
Eating	1.6	0.9 to 2.7
Talk on/Listen to Hand Held	**1.3**	**0.9 to 1.8**
Drinking	1.0	0.3 to 3.2
Adjusting Radio	0.6	0.1 to 2.2
Passenger in Adjacent Seat	0.5	0.4 to 0.7

Table 3: Reaching for moving items and dialling are riskier tasks than talking on or listening to a hand-held mobile phone

It should also be noted that using a phone *did not result in any crashes* with the leading vehicle and the risk estimates are primarily based on near crashes in which the driver was able to stop the distraction and avoid an accident.

[50]Klauer, S. G., Dingus, T. A., Neale, V. L., Sudweeks, J.D., and Ramsey, D. J. (2006). 'The Impact on Driver Inattention on Near Crash/Crash Risk: An Analysis Using the 100 Car Naturalistic Driving Study Data' (Report No. DOT HS 810 594). Washington, DC: National Highway Traffic Safety Administration.http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/NRD/Multimedia/PDFs/Crash%20Avoidance/Driver%20Distraction/810594.pdf

6. A stronger focus on text messaging dangers is needed

The VTTI's naturalistic studies included light vehicle[51] and truck drivers[52] and manual manipulation of phones such as dialling and texting of mobile phones and assessed the increase in risk of being involved in a safety critical event (crash or near crash). The VTTI said "talking or listening increased risk much less for light vehicles and not at all for trucks. Text messaging on a cell phone was associated with the highest risk of all cell phone-related tasks".

CELL PHONE TASK	*Risk of Crash or Near Crash event*
Light Vehicle/Cars	
Dialling Cell Phone	2.8 times as high as non-distracted driving
Talking/Listening to Cell Phone	1.3 times as high as non-distracted driving
Reaching for object (i.e. electronic device and other)	1.4 times as high as non-distracted driving
Heavy Vehicles/Trucks	
Dialling Cell phone	5.9 times as high as non-distracted driving
Talking/Listening to Cell Phone	1.0 times as high as non-distracted driving
Use/Reach for electronic device	6.7 times as high as non-distracted driving
Text messaging	23.2 times as high as non-distracted driving

Table 4: Naturalistic research has been able to tease out the riskier sub-tasks involved in distracted driving

This study clearly identifies driving and texting as a very dangerous practice and it should be tackled as a priority by governments and road traffic authorities.

Although some reviewers[53] downplay the strength of the finding of 23 times risk form texting while truck driving because it is based on a small amount of data and research on commercial truck drivers is not directly attributable to the whole population, the finding pinpoints the potential area of concern.

A more recent naturalistic driving study by the VTTI for the Federal Motor Carrier Safety Administration (FMCSA) in the United States, which was released on October 28, 2010, found using a cell phone to text, email or access the internet was very risky.

[51]Klauer, S. G., Dingus, T. A., Neale, V. L., Sudweeks, J.D., and Ramsey, D. J. (2006). 'The Impact on Driver Inattention on Near Crash/Crash Risk: An Analysis Using the 100 Car Naturalistic Driving Study Data' (Report No. DOT HS 810 594).Washington, DC: National Highway Traffic Safety Administration

[52]Olson,R.L., Hanowski,R.J., Hickman,J.S., Bocanegra,J. 2009. 'Driver distraction in commercial vehicle operations' (Report FMCSA-RRR-09-042)Washington, DC: US Department of Transportation

[53] Kircher, K., Patten, C., and Ahlström, C., 2011 Mobile telephones and other communication devices and their impact on traffic safety - a review of the literature. VTI (Swedish National Road and Transport Research Institute): Linköping, Sweden, VTI report 729A

"The data suggests that truck and bus drivers who use their cell phone to text, email, or access the internet ***are very likely*** to be involved in a safety-critical event," it says.

NRMA Insurance showed[54] that people who text while driving spend almost 70 per cent of the trip glancing at their phone. They found that drivers were glancing at their phones while texting for 1.4 seconds on average, which means that when travelling at 60km per hour drivers were taking their eyes off the road for 22 metres at a time or almost five car lengths.

Monash University's Accident Research Centre (MUARC) found in 2006[55] that drivers engaged in texting had their eyes off the road up to 400 per cent more than when not texting and concluded that "retrieving and, in particular, sending text messages has a detrimental effect on a number of safety critical driving measures, such as the ability to maintain lateral position, detect hazards, and to detect and respond appropriately to traffic signs".

Importantly the recent VTTI naturalistic studies have allowed researchers to segment mobile phone tasks into sub-tasks and better understand each sub-task's relative risk. The research clarifies that reaching and dialling sub-tasks have a high degree of risk, whereas talking and listening do not.

"In other words, although talking on the cell phone did not show an increased risk, a driver must take several risk-increasing steps in order to use the electronic device for conversation. This is an important finding suggesting that much of this risk may be addressed through improved interface design," says the VTTI.[56]

The Director of the VTTI, Dr Tom Dingus, said several large-scale, naturalistic driving studies using sophisticated cameras and instrumentation in participants' personal vehicles conducted by the VTTI provided a clear picture of driver distraction and mobile phone use under "real-world driving conditions".

The study said the key difference between high risk and low-risk non-driving tasks involves the amount of visual distraction. Non-driving tasks associated with high visual attention have the highest odds of involvement in a safety-critical event.

[54] NRMA Media Release, 19 February 2010, 'Drivers - don't send that message'
[55] *The effects of text messaging on young novice driver performance Monash University Accident Research Centre* - Report #246 [2006] Hosking, S.G., Young, K.L., & Regan, M.A
[56] Virginia Tech Transportation Institute (VTTI) Media Release, 28 October 2010 'VTTI releases new study on results on distraction in commercial trucks and buses.'

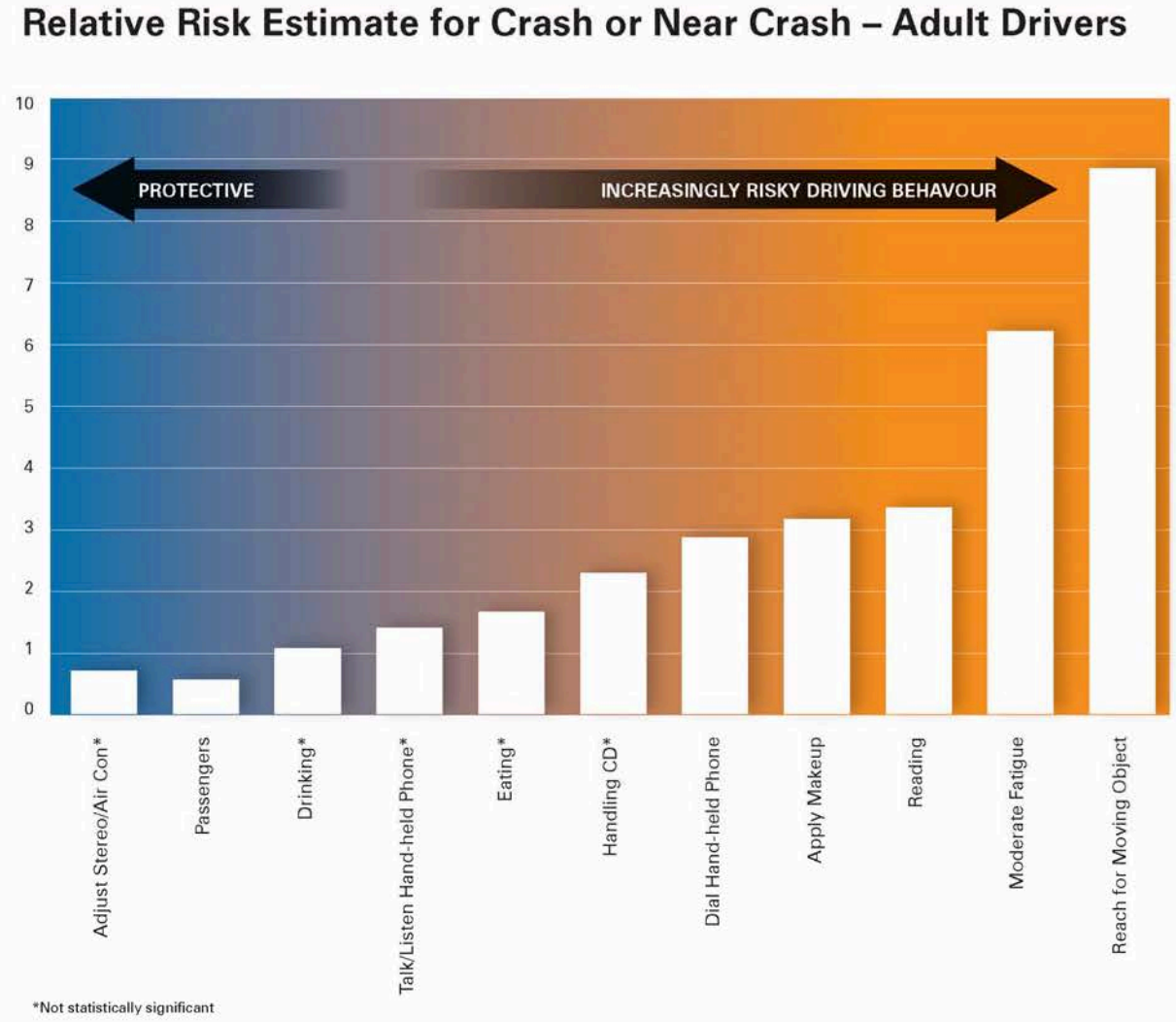


Figure 5: Naturalistic research has found distractions that require high visual attention have the highest odds of involvement in a safety-critical event.

The VTTI's research papers show that text messaging "also had the longest duration of eyes off the road time (4.6 seconds over a 6-second interval). Talking/listening to a cell phone allowed drivers to maintain eyes on the road and were not associated with an increased safety risk to nearly the same degree".

The VTTI explained the importance of drivers keeping their eyes on the road in a 2009 media release[57]:

> ***Eye glance analyses were conducted to assess where drivers were looking while involved in a safety-critical event and performing cell phone tasks. The tasks that draw the driver's eyes away from the forward roadway were those with the highest risk...***

[57]Virginia Tech Transportation Institute (VTTI) Media Release July 27, 2009 'New Data from VTTI Provides Insight into Cell Phone Use and Driving Distraction'

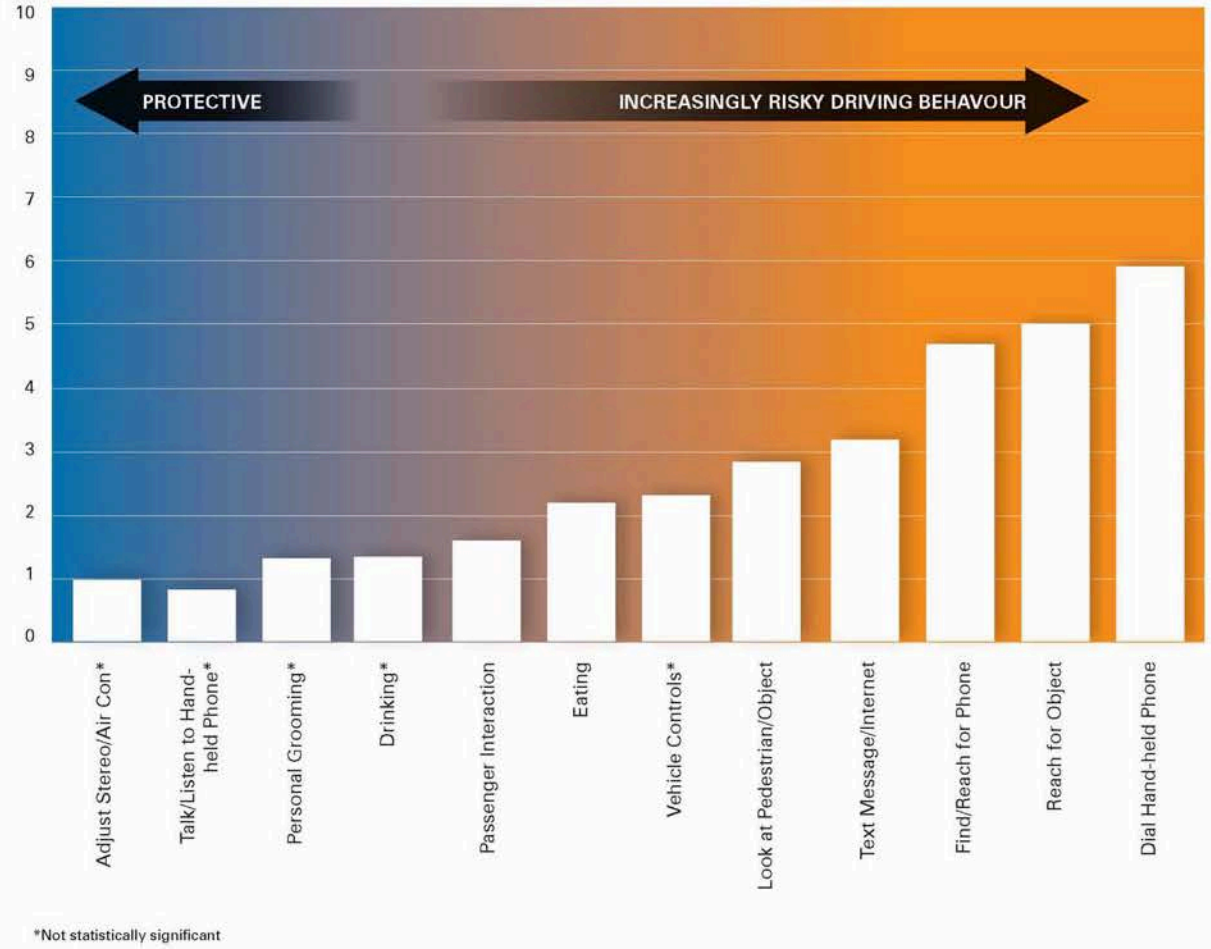
These results show conclusively that a real key to significantly improving safety is keeping <u>your eyes on the road</u>. In contrast, "cognitively intense" tasks (e.g., emotional conversations, "books-on-tape", etc.) can have a measurable effect in the laboratory, but the actual driving risks are much lower in comparison.

Rich Hanowski, director of VTTI's Centre for Truck and Bus Safety said "the take-away message is that drivers must keep their eyes on the road and tasks or activities that divert eyes from the road are risky".

Dr Dingus' large-scale naturalistic driving studies in the United States have already prompted some motoring organisations in Australia and New Zealand to call for replication of his studies to supplement data gained from crash reports and increase understanding of the causes of crashes and near-crash events.

AMTA partnered with the Australasian College of Road Safety to bring Dr Dingus to Australia and he was the keynote speaker at the College's annual conference in September 2011.

Relative Risk Estimate for Crash or Near Crash – Teen Drivers



*Not statistically significant

Figure 6: Naturalistic research has found teens are involved in crashes or near crashes while distracted four times more often than adults

The key findings[58] he presented at the conference were:

- 10% of drivers create roughly 50% of the crash risk.
- Distraction and inattention are greatly under estimated as a cause of crashes.
- Teens are involved in crashes or near crashes while distracted four times more often than adults and this could be a rising epidemic if not addressed.
- Fatigue is a much larger crash risk problem than previously thought.
- However, if you are awake and looking at something you almost never hit it.

He also said the often-expressed view that talking on a mobile phone is worse than drunk driving was not supported by his extensive research.

Voice activated or single button push Bluetooth hands-free systems which did not require drivers to take their eyes off the road were the key to safer mobile phone use, Dr Dingus said.

This type of research presents valuable new insights into driver behaviour in real-world conditions and provides research-based facts on which governments and regulators can build a firm foundation for evidence-based policy approaches to equip the public with information that can save lives.

AMTA has been involved in preliminary talks with Professor Michael Regan of the Transport and Road Safety Research (TARS) branch at the University of New South Wales. He is investigating putting together a consortium to conduct a naturalistic study in Australia.

[58] Dingus, T., ACRS Conference Melbourne, Keynote Address 'Naturalistic Driving Assessments of Distraction and Fatigue' 1st September 2011 (points taken from presentation slides)

7. Mobile bans unenforceable and potentially more dangerous

The draft National Road Safety Strategy 2011-2020 distributed for public comment raised the idea of promoting phone-off policies (including hands-free) in government fleets and encouraging phone-off policies with all fleet operators.

It called for an examination of the case for prohibiting all mobile phone use (including hands-free) by novice, heavy vehicle, bus and taxi drivers over the next three years and examining the scope to ban all mobile phone use (including hands-free) by drivers as a part of "future steps".

AMTA believes banning all mobile use in cars would not only be unenforceable but would result in some drivers trying to hide their use of mobiles while behind the wheel, which would increase the danger of crashes.

Instead of banning mobiles in cars we need to educate drivers about using hands-free mobiles safely and when it is appropriate to use them and when it is not, depending on the traffic situation, road conditions and other factors.

AMTA has supported new road rules requiring drivers to place their mobiles in cradles attached to the dashboard of their car because it gets the phone up to the eye line level with the road and it is in easy reach to minimise distractions.

AMTA is concerned that any potential ban would result in drivers secreting their mobiles and engaging in dangerous and distracting behaviour to try and hide their use of a mobile. This would be counterproductive.

Singling out mobiles overlooks a range of other distractions faced by drivers. New research from the United States using sophisticated in-car cameras to give a picture of real-world driving conditions found applying make-up increased the risk of a crash or near crash by 3.1 times, dialling a mobile phone 2.8 times, handling a CD 2.3 times, reaching for a fixed object 1.4 times and talking and listening to a mobile phone 1.3 times.

Drivers face a range of potential distractions, not just mobiles – adjusting radios and CD players, talking with passengers, adjusting climate controls, and eating and drinking – all need to be taken into account.

Australian research, conducted by Monash University's Accident Research Centre (MUARC), also found the effects of distraction were more pronounced during car stereo tasks than during hands-free mobile phone tasks.

AMTA is not questioning that mobile phone use imposes physical, visual and cognitive demands on drivers which is why the mobile telecommunications industry supports the existing ban on hand-held use and text messaging in Australia.

However, a large body of research into driver distractions shows that mobile phones are only one of many distractions faced by drivers. In fact, the research shows that mobile phones are not the most common or significant of the distractions faced by drivers.

We believe all driving distractions should be considered and that mobile phones should not be singled out because to do so could lull drivers into a false sense of security.

As discussed in the previous section, there is now a large body of research into driver distractions that shows mobile phones are only one of the many distractions faced by drivers and mobile phone use is far less a risk than tasks routinely performed behind the wheel. Therefore all distractions must be considered and a legislative approach to driver distractions that is consistent with the science is required in Australia.

AMTA supports the current laws restricting hand-held mobile phone use in vehicles. At the same time we are conscious that hands-free operation is not a guarantee of safety. Drivers need to be educated to consider other factors such as traffic and weather conditions and the complexity of the conversations they engage in.

There is a range of research that shows there is no significant safety difference in hand-held or hands-free mobile phone use while driving. For example, a study[59] investigating drivers' ability to detect a car ahead decelerating while doing mobile phone related tasks did not show any difference in hand-held or hands-free mobile phone use. However, these studies may not be sensitive enough to detect the relatively small differences in safety between hands-free and hand-held use.

A recent NHTSA study[60] specifically considered whether or not hands-free devices were safer than hand-held. Based on driver simulator tests of 54 participants and post-test surveys they found that although drivers considered them easier to use than hand-held phones, the simulator tests showed hands-free devices were more time-consuming to interact with while driving.

Many studies, especially the driving simulator studies, test 'steady-state' conditions, i.e. when the call is already set up and underway, where the cognitive load may dominate and they are not necessarily considering the effects of the physical distraction of making and receiving calls.

A 2004 study[61] found drivers who used hands-free devices showed significantly improved vehicle control. The study found:

- 71% of the test subjects steered more accurately when using a headset
- 100% of the test subjects had faster brake reaction times when using a headset
- 92% of the test subjects maintained a more consistent speed when using a headset.

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[59] D Lamble et al. "Cognitive load and detection thresholds in car following situations: safety implications for using mobile (cellular) telephones while driving," *Accident Analysis and Prevention*, 1999 31 (6), pp.617-623

[60] Mazzae EN, Ranney TA, Watson GS, Wightman JA,'Hand-held or Hands-free? The effect of wireless phone interface type on phone task performance and driver preference' Proceedings *of the Human Factors and Ergonomics Society 48th Annual Meeting*, 2004.

[61] Stephen B. Wilcox, Ph.D., FDISA, 'Comparison of Driving in a Simulated Environment While Using a Cell Phone With and Without a Headset,' *Design Science*: August 2, 2004

In an Australian study into the relative risk of mobile phone use and traffic accidents, the researchers pointed out that:

> ***The distracting effects of different types of hands-free phones may not be equivalent—for example, searching for an earpiece to answer an incoming call may be more distracting than answering a phone mounted in a hands-free kit. Although voice activated units are becoming more common, only 6% of mobile phone users in our study had phones with this feature. The sample size was not large enough to assess whether certain types of hands-free devices, including fully hands-free, might be safer than other types.***[62]

More research is needed to verify the effectiveness of Australia's restriction on hand-held mobile phone use while driving and to explore the difference in safety afforded by the range of hands-free technologies available to drivers.

One key question to be investigated is whether or not an installed in-car hands-free interface which uses voice activated dialling eliminates most of the physical distraction and improves safety.

Australia is not unique in the experience that a small percentage of drivers continue to use hand-held mobile phones despite laws restricting their use. Following the introduction of laws in the state of New York making it a traffic violation to talk on a hand-held mobile phone while driving, the first such law in the USA, researchers observed a substantial short term effect.[63] Hand-held use declined significantly from 2.3 per cent before the law to 1.1 per cent in the first few months after the law. In Connecticut, an adjacent state with no such law the usage rate of 2.9 per cent did not change significantly from before or after the law. In a follow-up study[64] one year later, hand-held use was back up to 2.1 per cent. The researchers concluded that vigorous enforcement campaigns accompanied by publicity are necessary to achieve longer term compliance. More importantly, they could not tell if the law had improved traffic safety or had led to increased usage of hands-free devices.

In July of 2000, the Harvard Center of Risk Analysis prepared an analysis of the risks and benefits of mobile phones in vehicles[65] and developed the following findings:

- There are risks associated with using phones while driving, but they are small compared to other daily risks.
- Benefits are substantial and offer potential improvements in public health and safety.

[62]McEvoy SP, Stevenson MR,McCarttAT, WoodwardM, HaworthC, Palamara P, Cercarelli R, 'Role of mobile phones in motor vehicle crashes resulting in hospital attendance: a case-crossover study' *British Medical Journal*, 2005;331:428

[63]McCartt AT, Braver ER, Geary LL. 'Driver's use of handheld cell phone before and after New York State's cell phone law' *Prev Med* 2003;36:629-35

[64]McCartt AT, GearyLL. 'Longer term effects of New York State's law on drivers' handheld cell phone use'*Injury Prevention* 2004;10:11–15.

[65] 'Cellular Phones and Driving: Weighing the Risks and Benefits' *Harvard Centre for Risk Analysis*, July 2000

- It is premature to enact legislative restrictions; more research is needed to enable an informed, rational policy on phone use while driving.

- Government and industry should promote the responsible use of phones while driving through vigorous educational programs and active enforcement of existing motor vehicle laws.

- Existing laws prohibiting inattentive/careless driving should be enforced.

The NHTSA have also concluded[66] that:

> ***The distraction potential may be reduced if drivers are aware of the hazards and use their cellular telephones carefully while on the road. Distraction potential can also be reduced by ergonomically sound cellular telephone designs and new Intelligent Transportation System (ITS) technologies that may be capable of compensating for driver distraction by alerting drivers when traffic conflicts or hazards are present.***

One of the problems with banning mobiles completely is that such a law would be very unlikely to be retracted in the future when technological advances make future communication devices even less distracting. Already mobile phone users can use voice activated and voice recognition dialling features, hands-free devices and memory dial functions to reduce the effort to make a call.

Such laws would also not take into account advances in other car systems such as adaptive cruise control and collision warning systems which might compensate for the effect of driver distractions.

Volvo, for example, has developed an intelligent driver information system specifically designed to deal with driver distractions. The system monitors throttle movement, braking, steering angle and the use of indicators and wipers to determine whether it will withhold non-safety related information, including phone calls, from the driver. The system is currently in use in a number of Volvo models sold in Australia.[67]

We strongly believe that regulation should be 'technology neutral' and therefore will not need to be constantly adapted as technology advances.

In response to publicity in 2011 about the draft National Road Safety Strategy, a leading international safety expert has criticised calls to ban mobile phones from cars as unnecessary. Thomas Broberg, a senior safety adviser with Swedish car maker Volvo, was reported in the Age's Drive section saying the suggestion that Australia considers introducing a national ban on mobile phone use in cars would be something that his company — renowned for its focus on safety — would not support.

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[66] Goodman M, Bents FD, Tijerina L, et al. An Investigation of the Safety Implications of Wireless Communications in Vehicles.National Highway Traffic Safety Administration 1997 DOT HS 808-635 http://www.nhtsa.dot.gov/people/injury/research/wireless/c6.htm (accessed October 2005)

[67] *The Sydney Morning Herald*, 19 March 2004, page 3, 'Volvo holds the phone'

Volvo is working with the Swedish government on a target of zero road deaths by 2020, but according to Mr Broberg the argument that a hands-free mobile phone was too big a distraction in the car was not valid.

"Passengers are also a distraction in the car, so what do we do, ban them too?" Mr Broberg said during a demonstration in Melbourne in early December in 2010 to highlight Volvo's work on its world-first pedestrian avoidance system that can stop a car from running into an unwary pedestrian.

"There's always other sources of distraction that we have to drive with. [Mobile phone use] in cars is always going to be a very tricky issue, but we need to educate and promote good behaviour rather than just ban things," he said.

"The policy should be that we promote the use of hands-free, but we at Volvo are not able to determine or effect what will be a political decision."

Mr Broberg says Volvo's mobile phone policy for its employees allow their use in cars, but only if they use a hands-free system.

Already Volvo has technology that can delay some less important vehicle messages during busier or higher speed driving, allowing the driver to better concentrate on the road.

"Cell phone use is one of the areas we're targeting, because looking away from the centre of the road increases the risk of a collision," he said.

"It's interesting when you compare phone use with truck drivers on a walkie-talkie [UHF radio], because studies show that the truck drivers have a reduced risk of crashing when they're using a walkie-talkie," he said. "We need to do more study on that."

The only country in the world to seriously consider a total ban has been France. Following the publication of a report into the general safety of mobile phones by the Parliamentary Office of Evaluation of the Scientific and Technical Choices (OPECST) in November, 2002, the government considered introducing a total ban of mobile phones in vehicles.

The parliamentary report found that the only known health risk of mobile phones was the fourfold risk of traffic accidents and recommended the French driving code should include a provision preventing the use of mobile phones while driving, whatever the mode of use, since it was established that the use of hands-free kits did not reduce the collision risk.

However, the ban was never put in place because of the concern that the French police would find it impossible to enforce because they could not tell the difference between a driver talking to a passenger or themselves or if they were singing along to the radio.

The French government reverted to a restriction of hand-held use only and together with the automobile industry association represented by Renault, Peugeot, Citroën and the country's mobile phone operators, developed a driver education program.

Similar enforcement issues were experienced in Britain prior to the development of their laws restricting hand-held use of mobile phones while driving. In 2002 following intensive media

reporting of the risks of mobile phone use in cars, British police decided to strenuously enforce existing laws requiring motorists to be in proper control of their vehicles. The media reported that drivers who sing along with their car stereos would risk being pulled over by police.[68]

The Director of the Virginia Tech Transportation Institute, Dr Tom Dingus, said in October 2010:

> ***...there are many national campaigns advocating no cell phone use at all while driving, however, it may not be realistic in today's multi-tasking society.***

In November 2011 the Swedish National Road and Transport Research Institute (VTI) was commissioned by the Swedish government to investigate what options may exist for a ban on the use of mobile communication while driving. In April 2012[69] they concluded:

> ***It is our opinion that a combination of different countermeasures – which educate and inform the driver while at the same time support him or her in a safe usage of communication devices – is preferable to a law against communication device usage while driving.***

The report suggested a number of countermeasures covering both technical and educational solutions. They recommended education and information to change the attitude and opinion about mobile phone use while driving, both on a societal and an individual level.

"Another goal is to eradicate misconceptions and to increase the knowledge about which behaviour can be dangerous in which situations," the report said.

The report recognised that technical solutions can facilitate other countermeasures, but they also have a great potential to support and help the driver directly. They recommended further evaluation of the follow technical countermeasures:

- Situation-based adaptation of device functionality,
- real-time distraction warnings,
- safety nets and features built into the vehicle and into the infrastructure, and
- automatic information exchange between infrastructure, vehicles and communication devices to facilitate the driver's ability to foresee critical situations.

Importantly the report also recommended that any "technical solutions should preferably be global, which can meet legal, cultural, economic and technical obstacles."

[68] *The Express*2 April 2002 page 28 'Karaoke drivers out of tune with police'
[69]

Unintended consequences of bans

Media coverage of studies that show no difference in safety between hands-free and hand-held mobile phones often result in calls for a total ban of mobile phone use in cars in Australia or calls to use radio wave jammers in cars. However, the difficulty of enforcing a total ban would make it unworkable and may in fact lead to some drivers taking risks to use mobile phones surreptitiously to avoid detection.

The simple act of holding a phone beneath window height or on a driver's lap to avoid detection increases a driver's need to look away from the road – the very thing the new national road rules are trying to avoid by placing mobile phones in cradles on the dashboard or out of sight in a drivers pocket when using Bluetooth hands-free devices.

Because almost all drivers now carry a mobile phone with them, if a ban or call jamming was in place, drivers would be likely to take alternative actions to still use their phones but to avoid breaking the law. Actions such as pulling over to the side of the road – which is often advised by law enforcement officers who are quoted in the media – can have fatal consequences and could put a driver at greater risk than hands-free mobile phone use.

In the UK one in ten motorway crashes involve vehicles parked on the hard shoulder and road safety authorities advise[70] drivers that:

- The risk of a fatal or serious accident to an occupant of a parked vehicle is about 3 times that of driving along the freeway:
- 32% of accidents on the side of the road or hard shoulder are fatal or serious, compared with 13% of all motorway accidents;
- On average around 50 people every year are killed or seriously injured in hard shoulder accidents.

In the United States 2,000 fatal accidents occur along the shoulder of roads each year and law enforcement agencies strongly discourage this practice.

In the US, in 2006 the FBI reported that 121 officers were fatally hit by vehicles between 1996 and 2005 and that one officer is killed each month, on average, from being struck by a motor vehicle[71].

In Australia we have already seen one example of the serious consequences of advising drivers to pull over to answer a mobile phone when driving.

[70] *Surviving the Hard Shoulder* leaflet: http://www.survivegroup.org/download_files/Leaflet%2022-06-07.pdf
[71] *Roadside Danger and the Moth Effect* (On line article): http://www.roadrules.ca/content/roadside-danger-and-moth-effect

On the 24th March 2010 the media reported[72] a Sydney driver was killed when he may have pulled over into the M7 emergency lane to answer his mobile phone. Tragically the car he was in was hit from behind by a semi-trailer and crushed.

Photo 1: The 'Sydney Morning Herald' reported a driver was killed when he pulled over to answer his mobile phone

Had the driver continued to drive along the M7 freeway and legally used his phone either in a cradle or using a Bluetooth or wired hands-free device set up to allow single button or voice activated driving, this fatality could have been avoided.

Drivers in Victoria are faced with the confusing situation of police advising drivers to pull over to answer mobile phones and the State's motoring advisory body the RACV advising drivers to not use emergency lanes because they are dangerous.

RACV chief traffic and roads engineer Peter Daly told the media[73] there were many well intentioned drivers trying to obey the law that bans motorists from driving with a mobile phone, but they were breaking another law in the process.

Clearly drivers are confused about what constitutes the safest course of action due to the many mixed messages they receive from road safety authorities and the police.

The draft National Road Safety Strategy 2011-2020 was distributed for public comment in early 2011 and it raised the idea of promoting phone-off policies (including hands-free) in government fleets and encouraging phone-off policies with all fleet operators.

[72] *The Sydney Morning Herald* 24 March 2010 'M7 horror: driver may have pulled over to use his phone'.
[73] *The Oakleigh Monash Leader*, 31 May 2004 'Danger at emergency lanes'.

It also called for an examination of the case for prohibiting all mobile phone use (including hands-free) by novice, heavy vehicle, bus and taxi drivers over the next three years and examining the scope to ban all mobile phone use (including hands-free) by drivers as future strategic directions.

After reviewing the response from just under 700 stakeholders, the National Road Safety Strategy 2011-2020 was published in May 2011 and did not include these proposed strategies and acknowledged while distractions are a growing concern, mobile phones are not the only source of driver distractions:

"Modern vehicles can include on-board DVD, satellite navigation, complex sound systems, climate controls, and audible and visual signals for an array of vehicle operations which compete for driver attention. Although it is very difficult to quantify the effect of all of these and other sources of distraction on serious road casualties, they are recognised as a major and potentially growing problem area.

"Mobile phones are a widely recognised form of distraction. Other sources of distraction, both inside and outside vehicles, should be monitored. People will continue to be distracted while driving, particularly by technology, and it is not possible to eradicate or outlaw every form of distraction."

The strategy also recognised that naturalistic studies now provide a better understanding of the risks involved with mobile phone use while driving:

"Emerging evidence from naturalistic driving studies reinforces concerns about phone-related tasks such as dialling and text messaging, but appears to suggest that the risks associated with talking or listening may be comparable to other common driver activities."

The strategy supported the need for more research to better understand the risks and to help to decide on the best solutions needed to minimise the risks:

"Further investigation is required to fully understand the safety impacts of mobile phones and other potentially distracting devices, and to inform the development of appropriate countermeasures."

Finally AMTA fully supports the future direction the strategy aims to achieve by 2020 – a focus on illegal rather than legal mobile phone use while driving:

Elimination of illegal mobile phone use while driving.

To support this aim AMTA have been working with a number of national road safety authorities to publish a joint brochure, titled 'Keep your eyes on the road'. The brochure – which could be handed out to drivers fined for illegal mobile phone use – promotes what actions drivers can take to follow the law and reduce the risks of using a mobile phone while driving. The brochure highlights the need for drivers to not text, to use a cradle and Bluetooth hands-free device, set their phone up for voice activated dialling and most of all the keep the focus on the forward roadway. A draft concept of the brochure is shown at Appendix E.

8. False drink driving comparisons

The claim, often made in the media and by law enforcement officials, that mobile phone use while driving is more dangerous than drink driving, is based on mistaken assumptions and an incomplete review of the established research in this area.

More importantly, the comparison could undermine other driver safety campaigns by reducing the stigma of driving whilst drunk and the comparison is considered irresponsible by some road safety authorities.

The often misinterpreted 1997 study by Dr Donald Redelmeier and Dr Robert Tibshirani published in the *New England Journal of Medicine*[74](NEJM) was the first to be linked with drink driving. This study is often cited for the proposition that driving while using a mobile is the same as driving drunk and no doubt the motivation of the many driver simulation studies involving intoxicated subjects which attempted to confirm this point.

However, what is not often recognised is that Drs Redelmeier and Tibshirani, have taken pains to correct this misinterpretation, going so far as to write a separate letter[75] to the NEJM and a number of other papers and articles to do so.

In the original 1997 paper the authors mentioned, among many other points, in the paper's discussion the similarity of the relative risks of both:

> ***We found that using a cellular telephone was associated with a risk of having a motor vehicle collision that was about four times as high as that among the same drivers when they were not using their cellular telephones. This relative risk is similar to the hazard associated with driving with a blood alcohol level at the legal limit.***
>
> ***We also found that cellular telephones have benefits, such as allowing drivers to make emergency calls quickly. A few drivers used their telephones only in the aftermath of a collision, thereby gaining some potential benefits and incurring no potential risks due to telephone use.***

This point was seized upon by the media which focused on this as the major outcome of the research. Consequently, Drs Redelmeier and Tibshirani wrote a letter[76] to the NEJM in the next edition to try to correct this inaccuracy saying:

> ***Most media reports were accurate. One occasional inaccuracy, however, has been the claim that using a cellular telephone is the same as driving***

[74]RedelmeierDA, TibshiraniRJ. 'Association between cellular telephone calls and motor vehicle collisions.'*N Engl J Med* 1997; 336:453-458
[75]RedelmeierDA. 'Cellular Telephones and Traffic Accidents.'*N Engl J Med* 1997; 337:127-129
[76]RedelmeierDA. Cellular Telephones and Traffic Accidents *N Engl J Med* 1997; 337:127-129

drunk. Not true. Driving with an alcohol level of 80 mg per deciliter is associated with a relative risk of collision of 4, which is about what we found for cellular telephones. However, a level of 120 mg per deciliter is associated with multiplication of risk by a factor of 10 (and higher levels have higher risks). Furthermore, alcohol circulates in the blood for hours, whereas a telephone call lasts only minutes. The cumulative risks associated with intoxication are greater than those associated with cellular telephones.

They also wrote a follow-up article[77] titled 'Is Using a Car Phone Like Driving Drunk?' in the more widely available magazine *Chance* to clarify this point because of the number of journalists who had continued to contact them after the publication of their research and tried to interpret their research to show using a mobile phone was the same as drunk driving. In *Chance* they made the same point saying:

As insinuated by the title of this article, some people have interpreted our research as indicating that using a cellular telephone is equivalent to driving drunk. This is not true. Driving with a blood alcohol level at the legal limit is associated with a relative risk of 4 (Simpson 1985), which is about the same as what we found for using a cellular telephone. Driving with a blood alcohol level 50% above the legal limit, however, is associated with a factor of 10 (Simpson 1985). And greater degrees of intoxication must surely be associated with even higher relative risks,

Furthermore, alcohol stays in the bloodstream for several hours, whereas a typical cellular telephone call lasts only one or two minutes. The cumulative risks associated with alcohol intoxication are much greater than those associated with using a cellular telephone.

This is supported by a recent Australian study[78] which compared the blood alcohol levels of drivers involved in real car crashes rather than driving simulators and found the risk of an accident was increased by 25 times at a blood alcohol concentration of 0.08. Mobile phones have not been shown to present this level of risk in any research.

The Canadian Safety Council responded[79] to calls to restrict mobile phone use in cars in Canada because of the results of the study conducted by Dr. Redelmeier saying:

Where is the evidence cell phones make our roads unsafe? Proponents of laws against car phone use cite a 1997 study by Dr. Donald Redelmeier. The sample group in that study was small and biased -- about 700 Toronto

[77]Redelmeier DA, Tibshirani RJ. Is using a car phone like driving drunk? *Chance* 1997;10:5-9
[78] Ryan GA. A Road Side Survey of Drinking Drivers in Perth, Western Australia. Proceedings of the 15th International Conference on Alcohol, Drugs and Traffic Safety, Stockholm, May 2000.
[79]Therien EJ. 'Banning cell phones would be irresponsible.' *Kitchener-Waterloo Record* Letter to the editor 7 March 2002.

drivers, all of whom had a cell phone and all of whom had been in a collision. The study was based on data from 1994. Since then, the number of cell phone users in Canada has more than quintupled from 1.8 million at the end of 1994 to more than 10 million today. Yet there's been no corresponding increase in collisions and road fatalities have dropped by 10 per cent.

The Canadian Safety Council also concluded that while individual drivers who pay more attention to their phone are a hazard, restricting mobile phone use in vehicles would be counterproductive, irresponsible and unenforceable.

Ongoing media interest in Redelmeier and Tibshirani results and the false link with drink driving also resulted in driving simulator studies which involved drivers at or near the drink driving limit compared to drivers using mobile phones.

The first, then unpublished report[80] –conducted by the UK Transport Research Lab – was funded by a UK insurance company and resulted in a great deal of further media interest in this comparison in the UK and around the world.

The Direct Line Insurance study[81] claimed their research showed that using a mobile phone when driving significantly impairs the driver's attention to potentially hazardous situations, more so than having a blood alcohol level at the UK legal limit (BAC 0.08).It found that drivers' reaction times were, on average, 30 per cent slower when talking on a hand-held mobile phone compared to having a BAC of.08 per cent and nearly 50 per cent slower than under normal driving conditions.

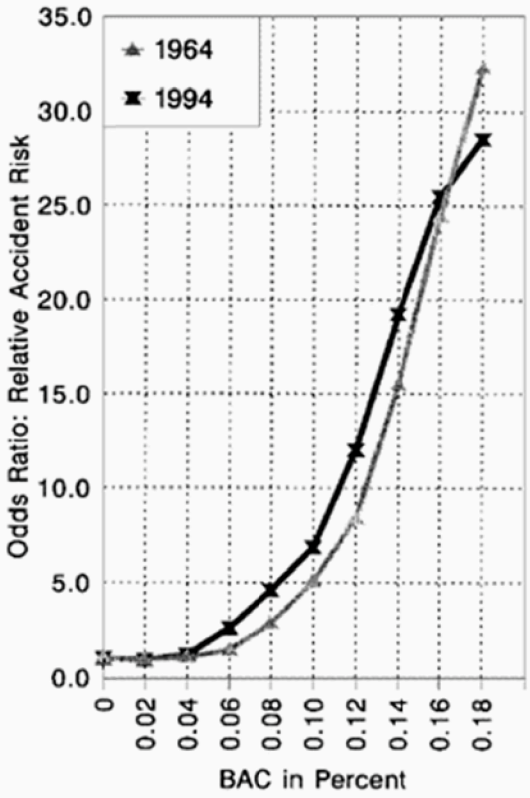
At the time their press release said "Direct Line research has revealed that talking on a mobile phone whilst driving is more dangerous than being drunk behind the wheel." Therefore it was promoted, as if the overall risk was the same – which is not an accurate representation of the results. The issue of hand-held bans were being debated in the UK at the time and the study was used to create media support for the bans.

Driver simulation studies which use sophisticated video display screens and graphics software to emulate driving conditions can only assess risk factors in closed environments: however, claims the overall risks are the same is like suggesting video games accurately represent real life.

[80] Direct Line Motor Insurance. *The Mobile Report: A report on the effects of using 'handheld' and 'hands-free' mobile phones on road safety.* Unpublished paper March 2002

[81]Burns, P. C., Parkes, A., Burton, S., Smith, R. K., & Burch, D.'How dangerous is driving with a mobile phone? Benchmarking the impairment to alcohol,' TRL Report TRL547. TRL Limited, Berkshire, United Kingdom 2002

More importantly, at or around the legal limit the impairment from drinking has not started, and any comparison with a distracted driver in a simulator could result in significant differences. But any impairment from mobile phone use remains the same and does not increase exponentially as does the impairment from continued alcohol consumption and driving.



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In fact, some road safety experts think this false comparison is irresponsible.

In response to media reports on the study Edmund King, executive director of the Royal Automobile Club's campaign arm the RAC Foundation, said:

> ***The interpretation of this research on mobile phones is dangerous and irresponsible. Drivers who get behind the wheel after drinking are more likely to take risks. They have no perception of the risks involved as alcohol impairs judgement.***
>
> ***Driving with children in your vehicle can be extremely distracting, but it would be considered irresponsible to suggest the children are as socially unacceptable as drink-driving.***

This was followed by other similar driver simulator research in the USA.

The most highly publicised and best known was by researchers at the University of Utah [82] who used a high-fidelity driving simulator to compare the performance of mobile phone drivers with drivers who were intoxicated from ethanol (BAC 0.08). They reported that when drivers were conversing on either a hand-held or hands-free mobile phone, their braking reactions were delayed and they were involved in more traffic accidents than when they were not conversing on a mobile phone.

By contrast, when drivers were intoxicated from ethanol they exhibited a more aggressive driving style, following closer to the vehicle immediately in front of them and applying more force while braking. The authors concluded when driving conditions and time on task were controlled for, the impairments associated with using a mobile phone while driving can be as profound as those associated with driving while drunk.

However, more recently the Virginia Tech's Transportation Institute also took steps to debunk the misleading claims that driving using a mobile phone is as dangerous as drink driving.

Based on these findings of naturalistic studies, VTTI explained in a media release[83] (shown at Appendix C) that driving simulator studies may have overestimated the relative risk and the widespread comparison with drunk driving is false:

> ***Recent results from other researchers using driving simulators suggest that talking and listening is as dangerous as visually distracting cell phone tasks. The results from VTTI's naturalistic driving studies clearly indicate that this is not the case. For example, talking and listening to a cell phone is not nearly as risky as driving while drunk at the legal limit of alcohol. Recent comparisons made in the literature greatly exaggerate the cell phone risk relative to the very serious effects of alcohol use, which increases the risk of a fatal crash approximately seven times that of sober driving. Using simple fatal crash and phone use statistics, if talking on cell phones was as risky as driving while drunk, the number of fatal crashes would have increased roughly 50% in the last decade instead of remaining largely unchanged.***
>
> ***These results show conclusively that a real key to significantly improving safety is keeping your eyes on the road. In contrast, "cognitively intense" tasks (e.g., emotional conversations, "books-on-tape", etc.) can have a measurable effect in the laboratory, but the actual driving risks are much lower in comparison.***

Dr Dingus has also commented on what he termed the "disconnect" between naturalistic and simulator research:

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[82] Strayer DL, Drews FA, Crouch DJ,'A comparison of the cell phone driver and the drunk driver' *Hum Factors*, 2006 Summer;48(2):381-91

[83] Virginia Tech Transportation Institute (VTTI) Media Release July 27, 2009 'New Data from VTTI Provides Insight into Cell Phone Use and Driving Distraction'

It is important to keep in mind that a driving simulator is not actual driving. Driving simulators engage participants in tracking tasks in a laboratory. As such, researchers that conduct simulator studies must be cautious when suggesting that conclusions based on simulator studies are applicable to actual driving. With the introduction of naturalistic driving studies that record drivers (through continuous video and kinematic sensors) in actual driving situations, we now have a scientific method to study driver behaviour in real-world driving conditions in the presence of real-world daily pressures. As such, if the point of transportation safety research is to understand driver behaviour in the real-world (e.g., increase crash risk due to cell phone use), and when conflicting findings occur between naturalistic studies and simulator studies, findings from the real-world, and not the simulator-world, must be considered the gold standard.

It is also critical to note that some results of recent naturalistic driving studies, including those highlighted here as well as others (e.g., Sayer, Devonshire and Flanagan, 2007) are at odds with results obtained from simulator studies. Future research is necessary to explore the reasons why simulator studies sometimes do not reflect studies conducted in actual driving conditions (i.e., the full context of the driving environment). It may be, as Sayer, Devonshire and Flanagan (2007) note, that controlled investigations cannot account for driver choice behaviour and risk perception as it actually occurs in real-world driving. If this assessment is accurate, the generalizability of simulator findings, at least in some cases, may be greatly limited outside of the simulated environment.

In conclusion, the repeated public claims that mobile phone tasks, including using legal hands-free devices, are as dangerous as drink driving are not supported by the latest scientific evidence and run the risk of de-stigmatising the very dangerous practice of driving while under the influence of alcohol.

We believe, based on this evidence, that treating all mobile phone driving tasks as dangerous as texting or equivalent to drunk driving is not justified and is counterproductive because hands-free mobiles are legal and drivers do not believe the comparison with drunk driving.

If using mobiles is as dangerous as drink driving, then we would expect to see a dramatic increase in traffic crashes. There are more than 29 million mobile services in operation in Australia, which is greater than the population and therefore would include almost all drivers. However, the road fatality reduction has continued despite the exponential rate of mobile phone use.

Finally, mobile phone subscribers also provide the extra eyes and voice for police in reporting aggressive, reckless or drunk drivers, accidents and other road hazards. In the past five years 62 per cent of emergency calls to 'triple zero' were made from mobile phones.[84]

[84] ACMA Communications Report 2009-10: http://www.acma.gov.au/webwr/_assets/main/lib311995/2009-10_comms_report-complete.pdf

9. The role of legislation and education

When announcing the AAA's more recent study, the Governors Highway Safety Association (GHSA) expressed concern that simply banning drivers from talking on a mobile phone while driving sends a bad and potentially dangerous message. The association has asked States not to restrict even hand-held mobile phone use without addressing other distracting behaviours. Colonel Jim Champagne, GHSA vice chair, said:

> ***We are particularly concerned about legislation that would ban only handheld cell phones because it would give drivers a false sense of safety.***
>
> ***...the best course of action is to conduct educational campaigns to alert drivers to the dangers of distracted driving.***[85]

Commenting[86] on proposals to ban mobile phones in the United Kingdom in 2002, Edmund King, Executive Director of the RAC Foundation, said:

> ***Drivers face hundreds of distractions whilst driving including passengers, pedestrians, posters, cones, congestion and cyclists. In the early sixties many people raised fears about the distracting effects of having a radio in the car. Having a short conversation on a hands-free mobile is not in itself a distraction as it all depends on the emotive level of the discussion."***
>
> ***"Motorists often stop talking to passengers when their auto pilot switches off and they sense danger ahead. Indeed the hands-free mobile phone can reduce tension in the car by enabling the driver to inform their office that they will be late. This can relieve tension, reduce the temptation to speed and to road rage.***

A study[87] by the National Research Institute of Police Science in Japan, found that the key to preventing accidents caused by distractions was the driver deciding to slow down when they knew they were being distracted by a secondary task, such as lighting a cigarette. This was found to be a particular problem for young drivers who engaged in such tasks without recognising the increased risks and therefore did not slow down as a result. The Institute concluded that the solution was driver education of the risks of distractions and the need to slow down when engaged in any secondary task to driving.

[85]Champagne J.Remarks of Colonel Jim Champagne, vice chair, Governors Highway Safety Association at the National Press ClubWashington D.C. 2003.
[86]RAC Foundation, Media Release, 'Mobile phones on the move' 18 August 2002.
[87]Makishita H, Mutoh M. 'Accidents caused by distracted driving in Japan.' *Safety Science Monitor* Volume 3 1999.

Unfortunately, in a number of driver simulation studies the criteria established in the study include slowing down as a negative outcome and they do not see this type of behaviour as an appropriate response by drivers to a secondary task or distraction.

Since 1983, several independent reports [88] [89] [90] [91] [92] [93] [94] have looked at the issue of mobile phone use while driving. The overwhelming majority of these reports have recommended additional data collection and have suggested education over legislation as the key to increasing the responsible use of mobile phones.

AMTA is not questioning that mobile phone use imposes physical, visual, and cognitive demands on the driver and the mobiles industry is not advocating the existing ban on hand-held use in Australia be changed. While technology can address physical and visual factors, education is required to address cognitive factors. Therefore, the most useful action the mobiles industry and governments can take is to help educate customers about the appropriate use of mobile communications products in vehicles.

The mobiles industry in Australia has consistently advised all drivers to make safety their first priority by always using a hands-free kit. A hands-free device can reduce the physical effort to make and receive calls; however, drivers should also avoid making calls in adverse traffic or weather conditions and should not engage in complex or emotional conversations. If a call is unnecessary or you consider it unsafe to answer at the time, don't answer the call and let it divert to voicemail or an answering service.

They should also plan ahead and make calls when stationary or during rest breaks in long trips. Drivers can also use a phone with voice activated dialling and automatic answering features to reduce the effort to make and receive a call. They should never take notes, look up phone numbers nor read or send text messages.

The Australian Mobile Telecommunications Association has developed 10 safety tips for mobile phones and driving (see Appendix A) and by adhering to these simple common sense practices, drivers can make full, productive and safe use of mobile phones.

AMTA has taken considerable steps to improve driver education, particularly in regard to learner drivers. Over the past two years AMTA has met with Commonwealth and state police and

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[88] LissyKS, Cohen JT, Park MY, Graham JD. 'Cellular phone use while driving: risks and benefits.' *Harvard Center for Risk Analysis*2000

[89] Hahn RW, Tetlock PC. *The Economics of Regulating Cellular Phones in Vehicles*, AEI-Brookings Joint Center for Regulatory Studies Oct 1999

[90] Cain A, Burris M. 'Investigation of the Use of Mobile Phones While Driving' Center for Urban Transportation Research, University of South Florida, June 1999

[91] Goodman M, Bents FD, Tijerina L, et al. 'An Investigation of the Safety Implications of Wireless Communications in Vehicles' National Highway Traffic Safety Administration 1997 DOT HS 808-635

[92] Department of California Highway Patrol, Office of Research and Planning. *Effects of Cellular Telephone Use on Driver Behaviour*.1997

[93] ViolantiJ. 'Cellular Phones and Traffic Accidents: An Epidemiological Approach' *Journal of Society of Public Health*November 1997.

[94] Wisconsin Department of Transportation, Bureau of Transportation Safety.Wisconsin *Distracted Driver Task Force: Summary of Proceedings* 1996.

transport ministers, road traffic authorities and motoring organisations to discuss the important safety issue of driver distraction.

The association's Ten Tips which have been developed following a careful analysis of the research and a review of other similar safety guidelines around the world, have also been reviewed by road safety authorities in Australia. Following this review a number of the tips have been amended or emphasised.

As a consequence of these meetings, most of the Australian states are considering or have agreed to include the tips in their official driver education materials.

AMTA joined the Federal Minister for Infrastructure and Transport, Anthony Albanese, the Australian Local Government Association and V8 Supercar champions, Jamie Whincup and Craig Lowndes, at Christmas 2010 to urge drivers to take care while driving during the holiday period. The joint media release is shown at Appendix D.

In addition AMTA members have carried out their own information and education activities. For example, some members have produced television commercials and run media campaigns to educate their customers about the best practice in using hands-free mobile phones while driving. Mobile phone manufacturers have also added safety advice to their handsets user manuals.

It should also be noted that mobile phone subscribers often provide the extra eyes and voice for police and road safety authorities in reporting aggressive, reckless or drunk drivers, accidents and other road hazards.

In the past five years, 62 per cent of emergency calls to 'triple zero' were made from mobile phones.[95]

The widespread use of mobile phones by drivers has led to those concerned about major road safety risks, such as speeding, drink driving and fatigue, to use mobile phones to report reckless drivers. For example, when Victorian road fatality figures in Easter 2002 topped the Nation, *The Age*[96]reported that Victoria Police's acting Assistant Commissioner for Traffic, Bob Hastings, asked drivers to use their mobile phones to report any recklessly driving they witnessed.

Unfortunately, in discussions about mobile phone use while driving the benefits are rarely mentioned. For instance an Australian study[97]by Professor Simon Chapman of the University of Sydney, found one in four mobile phone users have used their phone to report a dangerous situation.

The report also revealed: one in eight (or 623,220 users) have reported a road accident involving others; and two out of three users had used their mobile phone to call ahead and say they were running late, and that almost all of these had consequentially slowed or calmed down as a result.

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[95] ACMA Communications Report 2009-10: http://www.acma.gov.au/webwr/_assets/main/lib311995/2009-10_comms_report-complete.pdf

[96] *The Age* 3 April 2002 page 4 'Dob In Reckless Drivers, Mobile Motorists Urged'

[97] Chapman S, Schofield WN. 'Emergency use of cellular (mobile) telephones.' *The Lancet* 1998; 351: 650.

Therefore, we need to be careful not to lose the proven safety benefits of mobile phones when attempting to avoid what is just one of the many everyday distractions faced by motorists.

10. Technology neutrality and the need for a consistent national approach

AMTA believes a critical principle for regulators tackling road safety issues is the adherence to "technology neutrality" in dealing with in-car technology and the need for a consistent and uniform approach to regulation of communications technology in vehicles.

Convergence and technology neutrality

The convergence of different technology platforms being offered in single devices is known as technological convergence. For example, smartphones provide multi-media services, GPS services, internet access, SMS/MMS and mobile telephony functions in a single device negating the need to carry multiple devices.

AMTA believes it is important for regulators to treat in-car communications technology in a technologically-neutral way and not discriminate against particular devices, which, in a convergent world, are evolving towards performing similar tasks. Picking winners or favouring one technological device over another in a convergent world leads to arbitrary laws that can confuse drivers and have unintended consequences of denying users and motorists safety benefits.

For example, modern smartphones have in-built GPS functionality which allows users to access navigation and location-based services. These functions are similar to those provided by portable navigation aids, such as NavMan and TomTom. In fact, in many cases smartphones and navigation devices use the same software.

Convergence, of course, is not a one-way street; it's not just happening to mobile phones and leaving navigation aids suspended as single application devices. Just as convergence in mobile phones is delivering an array of different technologies in one device so is convergence impacting on the range and nature of services offered by portable navigation devices.

Expanded functionality in latest models of portable navigation devices offer functions other than GPS services with video capacity, the ability to route phone calls through mobile phones using Bluetooth and the inclusion of SIM cards to search online directories, provide weather forecasts and receive and transmit traffic movement data.

For example, one of the world's largest portable navigation device manufacturers, TomTom, provides 'live connected' services via SIM Cards in Europe. Information and updates for each service - such as the latest traffic information or weather forecasts - are sent directly to the SIM card of high-end TomTom devices, such as GO 940 LIVE, GO 740 LIVE and the GO 540 LIVE.

The transmission of more accurate map information and reference points from wireless connected navigation devices will also improve GPS systems. For example, TomTom has released a royalty free open platform (*OpenLR™*) which will allow all portable GPS devices to transmit and share information. This will lead to more accurate maps, as well as better data for Intelligent Transport Systems and Traffic Management Systems.

In the near future, all wireless connected GPS devices will be able to advise drivers of the shortest route to their destination on the basis of current traffic and road conditions and help to avoid congestion and road blockages.

Research firm Berg Insight estimates that more than 80% of navigation devices will have wireless capability by 2015. This rapid trend will make redundant any attempt to distinguish between mobile phones offering GPS services and navigation aids.

There is no particular safety difference between GPS navigation delivered by a built-in system or by a phone-based GPS or by a portable navigation device because the latest GPS software does not require drivers to look at the screen because directions are given via turn-by-turn voice instructions.

Effects of not adhering to a technologically-neutral approach

When regulators fail to adhere to a technologically-neutral approach it can result in arbitrary outcomes that create confusion for motorists and lead to a series of unintended consequences that can impact on safety issues.

For example, AMTA is concerned that due to changes to national road rules and each state's adoption of the rules, drivers are now faced with inconsistent road rules relating to the use of mobile phones and new convergent technology and mixed messages about driving and mobiles. This results in confusion for motorists, who are not clear on what they can and cannot do.

Motorists in some States and Territories are banned from using mobile phones for navigation services while they are allowed to use portable navigation aids for the same purpose. It is hard to understand the logic of such an approach because there is little, if any, difference in the way the two devices work – in many cases they use the same software.

AMTA has called on road safety and traffic authorities to push ahead with a review on drivers' use of GPS-enabled mobile phones to ensure that Australia has a national and uniform approach and to end confusion among drivers over what is permitted when behind the wheel.

Drivers are subject to a confusing number of different driving rules regarding the use of GPS-enabled mobiles for navigation purposes. For example, Victoria allows drivers to use GPS-enabled mobiles provided they are in a cradle while South Australia, which has a common border, bans drivers from using the device.

Australian drivers need to be certain of uniform rules governing this issue. It is confusing for drivers who often cross borders and are then subject to different rules and regulations governing the use of their mobiles. If it is confusing for drivers it is also creating a great deal of uncertainty for our industry which is marketing phones on a national basis only to have different State-based approaches.

Commonwealth and State Transport and Road Safety Ministers should resolve this issue and implement a uniform approach across Australia. AMTA believes that the Victorian approach to use of GPS-enabled mobiles is the best approach and should be used as a model for other states and territories.

Victoria allows its drivers to use GPS-enabled mobiles, provided they are placed in a cradle or holder. Under current road rules in New South Wales a driver is able to use the GPS function of their mobile as long as it is not held in the driver's hand.

There are no particular safety differences between GPS navigation delivered by a built-in system or by phone-based GPS or by a portable navigation device because the latest GPS software does not require drivers to look at the screen as directions are given via turn-by-turn voice instructions.

Under the laws, many Tasmanian and South Australian drivers who want the assistance of GPS navigation will face the added complexity of two devices in cradles on their windscreen – a phone and a navigation device.

States banning mobile phone based GPS would also prevent drivers getting real-time traffic information including warnings on potential driving hazards, which is a feature and safety benefit of modern GPS systems.

Traffic authorities have informed AMTA that addressing this potentially confusing and inconsistent situation is not a priority for transport safety officials.

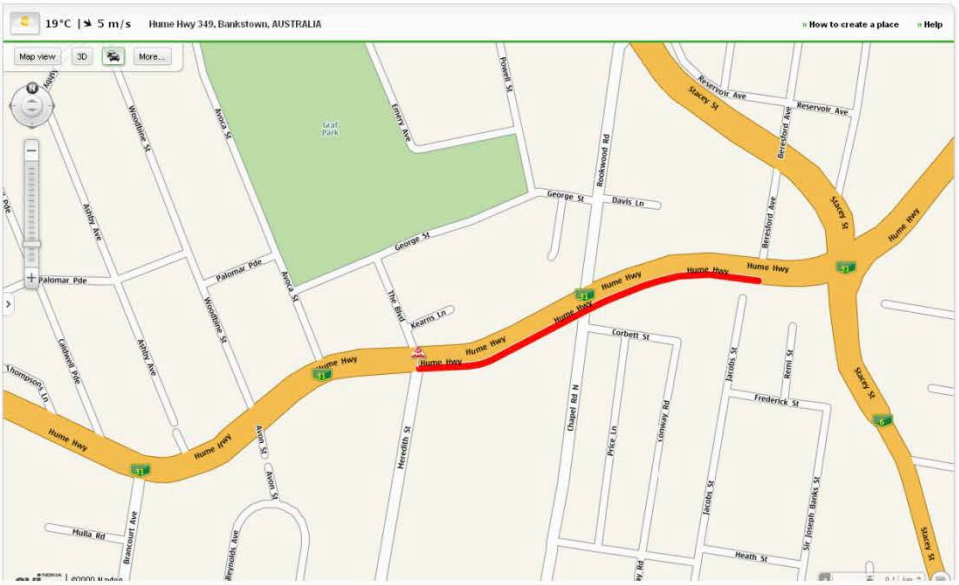
Australian Developments in live traffic and road safety data

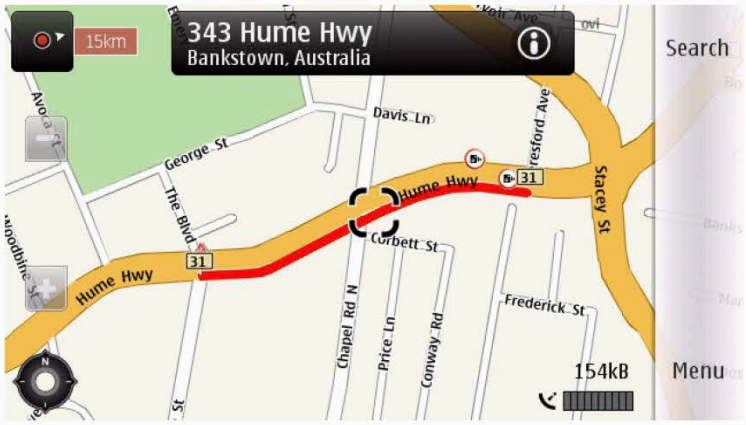
In Australia, consumers are able to receive traffic and safety information via their mobile phone using mapping packages such as Nokia's Ovi Maps 3.0 where the phone can receive real-time traffic incident data or Google Maps for current traffic status of many Australian motorways, major and minor arterial routes.

With a Nokia device supporting Ovi Maps 3.0, the consumer can get traffic incident updates sent to their phone automatically every 5 minutes while using the navigation function. If an incident occurs on the route pre-programmed into the phone, a voice notification will occur and the routing will be changed so as to avoid the incident.

The safety data can also alert the user to specific speed limit information, for example, a school zone.

Samples of the displays are below:





Only recently Google Australia announced that its mapping service in Australia would collect movement data from GPS functional mobile phones to provide drivers with real-time traffic flow information. Maps such as the one shown below could be checked on a PC or PDA before starting a trip – but the accuracy of traffic flow data will rely on data being collected from connected GPS-enabled mobile phones in motion on the road.

In Google Maps, when the 'traffic' function is turned on and checked to plan a trip or get directions, roads are marked with a coloured line indicating whether traffic flow is fast (a green line), medium (yellow), heavy (red) or stop/start (red and black).

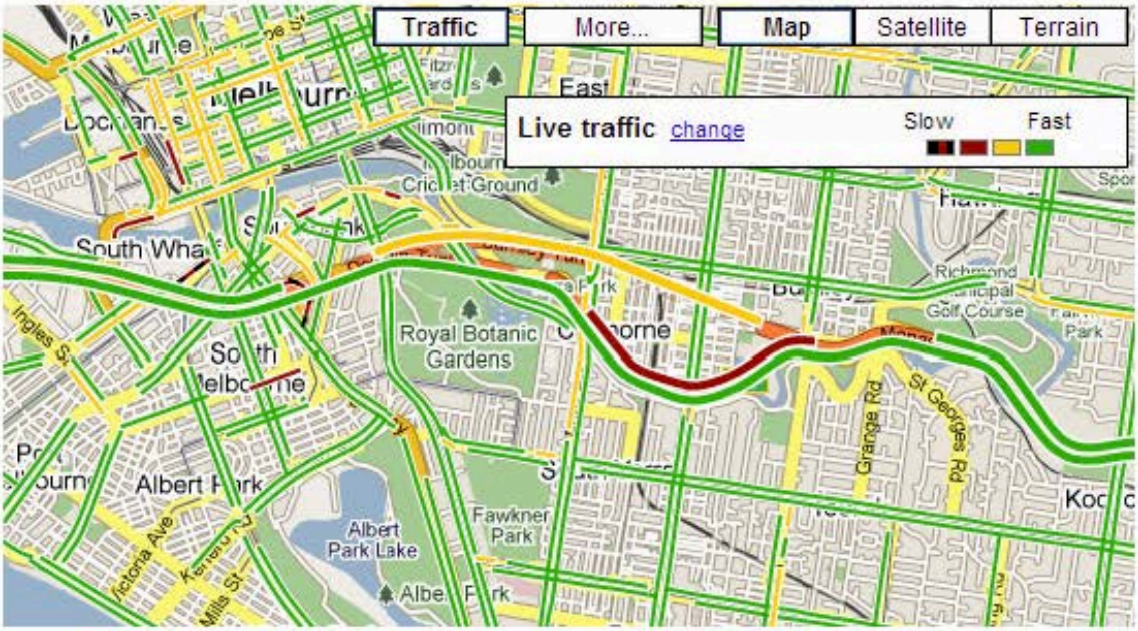


Figure 5: Mobile phone GPS provides drivers with real-time traffic flow information

Refinements of this technology include mapping services that collect movement data from GPS functional mobile phones to provide drivers with real-time traffic flow information. Restricting GPS-enabled mobile phones would severely limit the real-time data available to these trip planning tools.

11. Alternative approaches to encouraging responsible and safe driving

Instead of instituting unenforceable bans on mobile phone use in cars, AMTA strongly recommends more realistic and achievable goals for in-car mobile phone safety.

We understand that tackling the issue of driving distractions and misuse of mobile phones requires strong laws, tough enforcement and ongoing public education to make a difference.

We want to play our part with education and awareness of safety issues because we cannot expect the police to have to do it all. We cannot rely on legal action alone because there are not enough police to catch everyone breaking the law.

Mobile phones are only one of the many distractions faced by drivers; therefore, all potential distractions must be considered and mobiles should not be singled out. The mobile telecommunications industry does not question that mobile phone use imposes physical, visual and cognitive demands on drivers.

Although technology can help to address physical and visual demands of mobile phone use in vehicles, education is required to remind drivers not to be distracted by mobiles while driving and to reinforce the ban on hand-held use and texting. Therefore, the most useful action governments can take is to educate drivers about the appropriate and safe use of wireless communications products in vehicles.

The mobile telecommunications industry in Australia has consistently advised all drivers to make safety their first priority by always using a hands-free kit. A hands-free device can reduce the physical effort to make and receive calls.

However, drivers should avoid making calls in adverse traffic or weather conditions and should not engage in complex or emotional conversations. If a call is unnecessary or a driver considers it unsafe to answer at the time, they should not answer the call and allow it to divert to voicemail or an answering service.

Drivers should also plan ahead and make calls when stationary or during rest breaks in long trips. Drivers can also use voice-activated dialling and automatic answering features to reduce the effort to make and receive calls.

This and other advice is contained in AMTA's 10 safety tips for mobile phones and driving, which have been used in safety manuals by leading Australian companies, including Holden and Ford, and have also been used for safety advice in the Federal Government's 9000-car fleet.

AMTA strongly believes that providing practical information to assist drivers to mitigate and deal with risks associated with mobile phone use while driving is the best strategy.

AMTA believes blanket public statements by police and others that say or suggest all mobile phone use is too dangerous, including legal use of hands-free mobiles, are not an effective approach to

dealing with driving and mobile phone safety issues. Simply saying "don't, it is too dangerous" is unlikely to work, particularly when it is legal to use a hands-free kit when driving.

Road safety messages from police and other traffic authorities for drivers to turn off their mobiles because they claim they are too dangerous, often falsely equating mobile phone use (non-texting) to drink driving and incorrect and inflated claims that their use is adding to the road toll, sends mixed and confusing messages to the driving public.

AMTA is concerned that police and road traffic authorities seem to do little to explain hands-free laws because they do not want to be seen to encourage mobile phone use, which, in pursuit of a total ban, they portray as highly dangerous.

A better approach would be to make information available to drivers on how to use a mobile phone while driving more safely and to explain what is acceptable under the driving laws. There is little or no official government information available on these issues to inform drivers on safe and responsible mobile phone use.

AMTA believes that claims from police that the best strategy is for drivers to pull over to the side of the road to make or receive mobile phone calls fails to acknowledge the potential unintended consequences and risks of such actions. On March 24, 2010, the media reported a Sydney driver was killed when he pulled over into the M7 emergency lane to answer his mobile phone and was hit by a truck.

Our strategy is to focus on ways of mitigating the risks instead of denying or avoiding them. Drivers need to be educated about the potential risk and how to manage the risk of all distractions in the same way.

The lack of information and clarity about what drivers can and cannot do is typified by the failure of traffic authorities and police to publicise and adopt new road rules in the Australian Road Rules 8th amendment package, which proposed changes to Rule 300 clarifying the ban on handheld mobile phone use while driving.

The new rule prevents drivers from placing a phone on their laps to use the speaker function or to hold a mobile between their neck and shoulder to avoid handheld laws. Drivers can only use a wired or wireless hands-free device or phone that is mounted in a cradle to make a voice call.

AMTA has been strongly supportive of these moves to clarify the road rules for the use of hands-free mobiles while driving. In particular, we supported the change to require all drivers to either use an approved cradle or Bluetooth device to make sure drivers clearly understood they could not hold their phone while driving.

However, the 8th amendment package has not been comprehensively adopted and, where it has, there are differences in approach (as outlined in section 9 of this paper) to the treatment of the use of phone-based GPS services.

Under the road rules, which have been adopted in South Australia, Tasmania and the ACT, drivers are banned from using their phone-based GPS while they are allowed to use portable navigation devices for the same purpose. Victoria has adopted a different rule, one which we would argue is

based on common sense, to allow the use of GPS phones and MP3 functions provided the handset is in an approved cradle/holder.

Despite naturalistic research now indicating driver distractions are strongly related to tasks in which a driver looks away from the road, such as text messaging, reaching for moving objects and full number dialling, many road safety and law enforcement agencies continue to give the public inconsistent and mixed messages. Some examples include:

- Hands-free mobile phones are legal in all states, however, police continue to advocate in vehicle phone-off policies rather than educating drivers about existing laws;

- The new national road rules provide the option of a cradle which would put phones in the line of sight of drivers but when introduced in WA the media reported state police refused to enforce the new laws;

- Around the world road safety agencies warn drivers about the very serious risk of parking on the side of the road, but police in Australia continue to advise drivers to pull over to answer their phone.

AMTA believes the lack of a uniform, concerted, national approach is confusing for motorists and is inimical to the safety of motorist because of the failure to give them consistent information about what they can and cannot do to help ensure drivers' safe and responsible use of mobile phones.

Finally, we support the finding of the National Road Safety Strategy 2011-2020, which said: "Any consideration of changes to existing mobile phone laws would require a thorough analysis of the potential safety benefits and other impacts on the community, as well as the scope for effective detection and enforcement of offences under the changed laws."

12. Mobiles and workplace productivity

In early February, 2011, a Sydney newspaper (Sydney Morning Herald, February 8) published a headline: "Businesses baulk at ban on phone calls while driving". The headline followed the previous day's front-page story that said governments were considering a ban on all mobile phone use in vehicles.

The business representatives quoted in the article said a ban would have a "devastating effect" on business and be difficult to enforce. The Chief Executive Officer of the Australian Federation of Employers and Industry, Garry Brack, said thousands of people relied on using mobile phones to operate businesses while travelling and a ban would fundamentally change how some businesses operated.

It also quoted Justin Quinn, a plumber, who said: "I am a small business and I have to take calls, especially because I am a 24-hour-a-day emergency service so customers rely on us picking up the phone. If I let all my calls go to message bank and only listened to them when I arrived at a job, I would never get anything done."

The reaction to the proposed ban outlined in the *National Road Safety Strategy 2011 -2020* underscores the key role mobile phones play in driving productivity and enhancing Australia's full participation in the digital economy. In 2010, AMTA commissioned an Access Economics report, *Economic Contribution of Mobile Telecommunications in Australia,* which found mobile technology is playing a key enabling role with a $10.7 billion indirect flow-on to the wider economy in 2008-09 compared to the industry's direct economic impact of $6.7 billion. This report is being updated and new figures will be available later this year.

Access Economics[98] found the indirect contribution of $10.7 billion to Gross Domestic Product had grown significantly by $3 billion, or nearly 40%, over the previous two years as the result of rapid mobile data uptake driving big productivity gains across the Australian economy.

[98] Access Economics, *Economic Contribution of Mobile Telecommunications in Australia*, June 2010

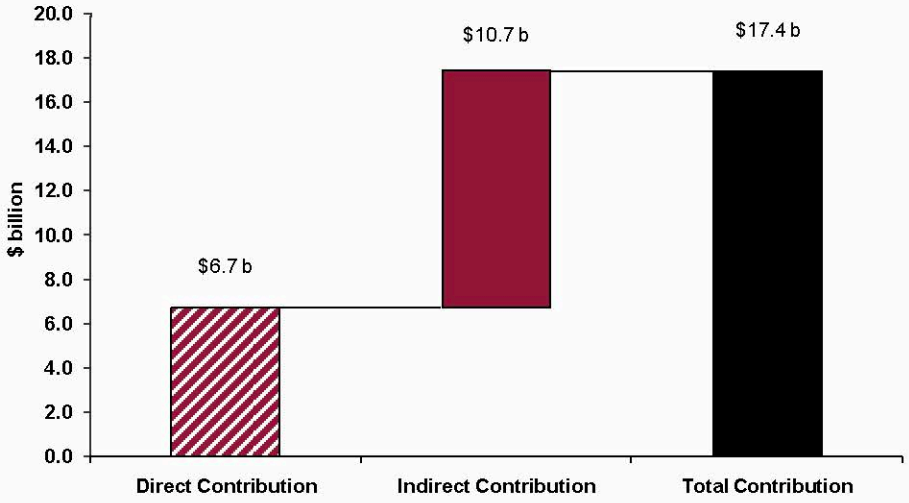


Figure 9: Total economic contribution of mobile telecommunications, 2008-09

Deloitte Access Economics says:

"The advancement of mobile devices has led to improved workplace productivity."

The Australian Communications and Media Authority (ACMA) says:

"There is widespread recognition that mobile broadband services are an economic enabler within society and the provision of these services, technologies and applications in the wider community is in the public interest."

AMTA believes that any move to ban or restrict mobile phones in vehicles should undertake a cost-benefit analysis and consider the potential impacts on the economy. Consideration should also be given to the impacts at the "micro" level to individual businesses that rely on mobiles as an integral part of the way they go about their business.

The advancement of mobile devices has led to improved workplace productivity. A survey conducted by Kelly Services[99] found that more than 80% of Australians believe mobile communications technology has boosted their personal productivity. However 36% of those surveyed also indicated that they were working longer hours due to greater contactability.

Anecdotal evidence suggests that mobile telephony has benefited business by allowing for time to be made productive and for people to remain up-to-date with news and developments in the work place whilst out of the office.

The Centre for Economics and Business Research (CEBR)[100]conducted a study on labour productivity on behalf of the UK telecommunications firm O_2 in 2004, finding that, overall, mobiles

[99]Kelly Services 2009, "Mobile technology lifts productivity but lengthens working hours for Australian employees", 7 July, accessed via http://www.kellyservices.com.au/web/au/services/en/pages/about_us_media_release_mobile_technology_lifts_productivity.html on 17 December

[100]Concept Economics 2009, *Next G Productivity Impacts,* February, Sydney

increased UK labour productivity by almost 1% or £8.9 billion. The gains were largest among 'mobile workers', the group of largely blue-collar workers with no fixed work location, including tradespeople, who make up an estimated 27% of the UK workforce. The authors estimate that UK workers spend around 550 million hours per year in cars on business trips, and that even a small increase in the share of car travel time spent working could therefore have a big impact on UK productivity.

In the US, a study by Ovum (2008)[101]found that mobile voice services generated productivity gains worth $157 million in 2004. Ovum argues that the widespread adoption of mobile technology has been the catalyst in the turnaround in US labour productivity growth over the past decade.

Capturing the economic benefits of mobiles does not paint the full picture. Behind the economic success of industry, innovation and services, there are customers who use their mobile telecommunications as an important part of their lifestyles and the way they interact with family, friends, work and the community.

Leading social researchers from the Australian National University, the University of New England and the University of New South Wales[102]found that mobile phones helped to balance their family and working lives. The project was part of an Australian Research Council Linkage Grant connecting researchers and AMTA to examine the social impact of mobile technologies at home and work.

The study found that mobiles were an indispensable part of the everyday life of Australians. More than 90% reported that their lives could not "proceed as normal" if they were suddenly without their mobile phone. More than half of the employed respondents believed that the mobile helped them balance their family and working lives and very few reported that mobile phones had a negative impact on their work-life balance.

The preceding studies on the economic and social impact of mobiles underscores their importance to productivity and helping people to balance their busy lives. AMTA stresses in its driving safety tips that all laws must be observed and stresses that not all situations are suitable for mobile phone use, particularly when traffic and road conditions are unsuitable. We also make drivers aware that emotional or complex conversations should not be held when driving.

[101] Ovum 2008, *The Increasingly Important Impact of Wireless Broadband Technology and Services on the US Economy,* prepared for CTIA – The Wireless Association, Boston

[102] Australian National University/AMTA 2007, *The Impact of the Mobile Phone on Work/Life Balance,* Preliminary Report, Australian Research Council Linkage Project

13. Conclusion

AMTA welcomes the opportunity for a wide-ranging public debate on road safety, particularly issues related to the safe and responsible use of mobile phones in vehicles. As the peak industry body representing the mobile telecommunications industry, AMTA believes it is timely for such a public discussion and we appreciate the opportunity to comment on this important safety issue.

AMTA proposes that governments and road traffic authorities consider a new approach to the issue of driver safety and mobile phone use. We fully support current laws banning the use of hand-held mobiles and the prohibition of the dangerous practice of texting while driving.

AMTA strongly believes the best way forward on this issue is for a partnership between industry, law enforcement agencies, road traffic authorities and governments to make drivers more aware of the importance of adhering to existing laws and educating drivers about practical, common-sense practices to reduce risks and use mobiles in vehicles in a safe, appropriate and responsible manner.

New research methodology utilising so-called naturalistic studies is shedding new light on mobile and driving issues and AMTA strongly believes results from such studies should be assessed before any actions are taken to institute drivers' bans or restrictions on mobile use.

AMTA believes this approach presents valuable new insights into driver behaviour in real-world conditions and provides research-based facts on which governments and regulators can build a firm foundation for evidence-based policy approaches to equip the public with information that can save lives.

Our industry acknowledges the real risks involved in various activities related to mobile phone use and driving. However, AMTA requests consideration be given to a new approach that is predicated on not telling motorists they cannot use their legal hands-free devices because they are potentially dangerous, to an approach of informing drivers how they can use their phones in a safer manner in situations that are appropriate for such use.

AMTA believes the clearly dangerous, unacceptable and illegal practice of text messaging while driving (RR 23.2) should be the prime focus of efforts to stamp out dangerous and illegal mobile phone practices. Secondly, instead of claiming that all mobile phone use is as dangerous as drunk driving (as research has shown it clearly is not) and recommending that drivers pull over to the side of the road to make or receive calls, we should give drivers information about safety procedures for mobile use.

To help remove the high risk (RR 8.8) of reaching for a mobile phone to answer an incoming call and reduce drivers' use of full number dialling (RR 2.8) there needs to be increased support for the new national road rules which allow for the use of cradles and hands-free devices with voice activated or one-button dialling. This is a simple and important first step which will significantly reduce these higher risks.

There is need for consistent messages to assist drivers and make them aware of what they can do with their legal hands-free kit and when it is appropriate to use it. There is little or no official

government information on how to use a mobile while driving safely or on the new driving laws and the use of cradles.

AMTA has offered to partner with police and other stakeholders to provide consistent safe driving messages, to focus on the riskiest behaviours and not cause unintended consequences, such as putting drivers at greater risk by asking them to pull over to the side of the road to make and receive mobile phone calls.

AMTA has developed its safe driving messages, which are designed to give drivers practical and up-to-date information on what to do and not what to do to help ensure they drive safely and responsibly when involved in legal mobile phone use.

AMTA does not support calls for a "phone-off" policy in fleet cars or a prohibition on all mobile phone use in vehicles because we believe banning all mobile phone use in cars is impractical and unenforceable and likely to lead to greater danger. Some drivers would be tempted to hide their handsets on their laps to make and receive calls instead of placing them in cradles on dashboards, which helps them keep their eyes on the road. Such approaches would potentially result in a greater risk of a crash or near crash than following safe hands-free driving practices.

AMTA does not believe there is sufficient evidence to support such bans on mobile phone use. The "evidence" for such an action is based on contestable claims about the risks involved and does not include the new so-called naturalistic studies and relies on unsubstantiated figures of death and injury.

AMTA calls for a new approach to informing drivers on how to use mobile phones safely and responsibly that is based on the following principles:

- **Consistent and clear safety messages**– There is a lack of official information telling drivers how they can use their legal hands-free mobiles more safely. Just telling drivers that it's all too dangerous and they should not use their mobiles, including their legal hands-free, is not working and calls for drivers to pull over to the side of the road to make a call can have unintended and tragic consequences.

- **Technology neutrality** – The need to treat GPS-enabled phones and portable navigation devices the same because they fulfil the same function and often use the same software. Convergence is making such distinctions redundant and legislators and regulators should not try to "pick winners".

- **Uniform and consistent laws**– Different road rules in different jurisdictions are confusing and there is a need for a national approach to Australian Road Rules on driver distractions.

- **Focus on all distractions** – Focusing on the wider distraction problem and not just singling out mobile phones as the only source of distraction when research clearly shows drivers face a range of distractions of which mobiles are but one and, according to some research, are not the biggest. Mobile phones are one of the most common distractions faced by drivers, but they are not the major cause of serious injury or fatality crashes and a focus on all potential driver distractions is needed.

- **Differentiate riskier mobile phone sub-tasks** – Using a mobile involves different sub-tasks and each constituent part should be looked at in terms of risk profile instead of treating all mobile phone use as risky and dangerous by referencing the riskiest procedure. Tasks which require drivers to take their eyes off the road should be the clear focus of education campaigns such as texting on a mobile while driving (RR 23.2 for heavy vehicles) and dialling full phone numbers (RR 2.8)rather than talking or listening (RR 1.3) to a mobile phone while driving (according to latest naturalistic research.)The task of reaching for a non-fixed object (RR 8.8) needs to be addressed by the consistent adoption and promotion of national road laws requiring the use of a cradle or hands-free device. Using the latest research data it makes sense to tackle this issue according to the constituent parts rather than a sweeping generalisation based on the most dangerous (and illegal) sub-task of mobile phone use – texting.

- **Balanced approach to rapidly changing technologies** – Carefully evaluate the costs and benefits of actions of restricting mobile phone use. For example, some States' decision to disallow drivers using GPS-enabled mobiles means that they are denying those drivers access to real-time traffic updates to warn them of potential road hazards ahead.

- **Regulatory forbearance -** There should only be regulatory intervention when it can be demonstrated that there is a net benefit to society, requiring costs as well as benefits to be brought into account. Also, regulation should be clear, concise, enforceable and better than alternative approaches.

14. Recommendations

AMTA recommends the following steps to help ensure safe and responsible driver use of mobile phones:

- Target the clearly dangerous, illegal and unacceptable practice of text messaging and driving, which has been shown to have the highest risk factor with a 23.2 times greater risk of a crash or near crash for heavy vehicles and a 3.3 times greater risk for teenage drivers, who tend to have four times more crashes.
- Increase support and promote awareness of the new national road rules requiring drivers to use their mobiles in approved cradles to help ensure that the risk of reaching for mobiles in cars is reduced. This will also help ensure that drivers' eyes are looking at the forward roadway, to reduce risks of taking their eyes off the road.
- Promote voice-activated, one-button and swipe dialling and other technological solutions to reduce risks of drivers taking their eyes off the road when receiving or making calls.
- Provide consistent messages to make drivers aware of what they can and cannot do with their legal hands-free kit and when it is appropriate to use. AMTA makes it clear that legal hands-free use is not appropriate in all road and traffic situations.
- Adopt a strategy of telling drivers how they can use their mobiles safely instead of overstating the risk of talking and listening on mobiles in cars, which according to the latest real-life, in-car research methodology is manageable and not as risky as other common practices, such as reaching for objects in cars, handling a CD or eating.
- Be aware of the unintended consequences of simplistic bans or restrictions, which would result in some drivers disobeying the law and using mobiles on their laps to avoid detection. This would increase the risk of a crash or near crash compared to drivers using mobiles in cradles in a safe and responsible manner.

Appendix A

Safety is Your Most Important Call

AMTA's Mobile Phones and Driving - Safety Tips

The Australian Mobile Telecommunications Association (AMTA), the peak industry body representing the mobile telecommunications industry in Australia, has produced the following driving tips as a public safety awareness measure.

1. **Never Use a Hand-Held Mobile:** In Australia it is illegal to use a mobile phone while driving unless you use a hands free in-car kit or portable hands-free device. Some states also require you to place the phone in a commercially designed cradle. If your cradle is windscreen mounted ensure it's positioned to minimise visual obstruction. When using a portable hands-free device make sure it is set up and working before you start to drive. A hands free device can reduce the physical effort to make and receive calls; however, it alone doesn't make using a mobile phone while driving safe.

2. **Never Look Up Phone Numbers, the Internet or Send Email or SMS:** Always keep both eyes on the road and do not read or send SMS text messages or look at the internet. Also, do not email or take notes during a call while driving. If required, use a directory assistance service which connects you directly to the number and don't look up phone numbers from your phone's memory. Set your phone up to use short one-button dialling or voice-activated dialling.

3. **Plan your Trip – Always Preset GPS and Try to Make Calls when Stationary:** Plan your trip and always preset your destination in GPS software before you start driving and use turn-by-turn voice guidance. Try to make calls when stationary or during rest breaks in long trips.

4. **Don't Call in Heavy Traffic, Poor Road Conditions or Bad Weather:** Don't accept or make calls if traffic, weather or road conditions would make it unsafe to do so. Also, even if the traffic conditions are light, always tell the person you are speaking to that you're driving and that you may have to end the call if driving conditions change.

5. **Don't Engage in Complex or Emotional Conversations:** If a call becomes complex or emotional tell the person you are speaking to, you are driving and suspend the call. Complex and emotive conversations on a mobile phone, or with other passengers, and driving don't mix – they are distracting and can be dangerous.

6. **Use Message Services to Answer Calls:** If a call is unnecessary or you consider it unsafe to answer at the time, don't answer the call and let it divert to voicemail or an answering service.

7. **Pull Over Safely if You Stop to Make a Call:** If you choose to stop to answer or make a call or retrieve a message, pull over carefully in a safe area. Don't stop where you could be a hazard to other vehicles, pedestrians or yourself.

8. **Use Your Phone's Features to Reduce the Effort to Make a Call:** Carefully read your phone's instruction manual and learn to use the speed dial and redial features of your phone. Also, if possible, use a phone with voice activated dialling and automatic answering features to reduce the effort to make and receive a call.

9. **Tell Callers You're Driving While On the Phone:** Always let the person you're speaking to know that you are driving. This lets them know that you may not always respond immediately and reminds you that driving safely is your first priority. "Hello, I'm in the car at the moment…"

10. **In Emergencies Use Your Phone to Call for Help:** Dial '000' or '112' in case of fire, traffic accident, road hazard or medical emergency. Both '000' and '112' are free calls, and will connect you to emergency services. Almost two - thirds of all calls to '000' are made from mobile phones.

For more information see www.amta.org.au

Appendix B

12 July 2005

Australian research highlights the need to do more than just use a hands-free device

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Australian research on the role of mobile phones in accidents requiring hospital attendance published in the *British Medical Journal* today highlights the need for drivers to take more precautions than just using a hands-free device when using a mobile phone whilst driving.

"A hands-free device can reduce the physical effort to make and receive calls. However, drivers should also avoid making calls in heavy traffic or bad weather conditions and they should not engage in distracting complex or emotional conversations," CEO of the Australian Mobile Telecommunications Association (AMTA) Graham Chalker, said.

The research conducted by The George Institute for International Health, University of Sydney, Injury Research Centre and the University of Western Australia, looked at 456 drivers over the age of 17 who owned and used mobile phones and had been in road crashes resulting in hospital attendance between April 2002 and July 2004. The study found a driver's use of a mobile phone in the 10 minutes before a crash was associated with a fourfold increased likelihood of crashing.

"This result is consistent with a similar study conducted in Canada in 1997, and has been the basis of the industry's continued efforts to educate drivers about ways to minimise the risk of all driver distractions including mobile phones," Mr Chalker said.

The research also found no significant safety difference when using a hands-free phone device. Using a hands free device while driving was not on its own a guarantee of safety, Mr Chalker said.

"If a call is unnecessary or you consider it unsafe to answer at the time, do not answer the call and let it divert to voicemail or an answering service," he said.

"Drivers should plan ahead and make calls when stationary or during rest breaks on long trips. Drivers can also use a phone with voice activated dialling and automatic answering features to reduce the effort required to make and receive calls on a hands-free device."

It is also important to note that the study found almost all drivers followed the legal requirement to use a hands-free device, with only 2 percent of drivers illegally using hand held phones. This was also confirmed in a 2003 study of Melbourne drivers.

"Australian drivers must be commended for their compliance with the law when using their mobile phones when driving. However, focusing only on hands-free use, as the law requires, may lull people into a false sense of security and drivers should also consider other factors such as traffic and weather conditions and the complexity of the conversations they engage in.

"When using a mobile phone while driving, safety is the most important call you will make. All drivers can make safety their first priority by following some simple common sense practices," Mr Chalker said.

AMTA's "Mobile Phones and Driving Safety Tips" can be found at: www.amta.org.au.

Optus, Telstra and Vodafone provided mobile phone call records of consenting participants in the study but the research was independently funded by Insurance Institute for Highway Safety, Arlington, Virginia.

Appendix C

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New Data from VTTI Provides Insight into Cell Phone Use and Driving Distraction

Blacksburg, Va., July 27, 2009 – Several large-scale, naturalistic driving studies (using sophisticated cameras and instrumentation in participants' personal vehicles) conducted by the Virginia Tech Transportation Institute (VTTI), provide a clear picture of driver distraction and cell phone use under real-world driving conditions. Combined, these studies continuously observed drivers for more than 6 million miles of driving. A snapshot of risk estimates from these studies is shown in the table below.

"Given recent catastrophic crash events and disturbing trends, there is an alarming amount of misinformation and confusion regarding cell phone and texting use while behind the wheel of a vehicle. The findings from our research at VTTI can help begin to clear up these misconceptions as it is based on real-world driving data. We conduct transportation safety research in an effort to equip the public with information that can save lives," says Dr. Tom Dingus, director of the Virginia Tech Transportation Institute.

In VTTI's studies that included light vehicle drivers and truck drivers, manual manipulation of phones such as dialing and texting of the cell phone lead to a substantial increase in the risk of being involved in a safety-critical event (e.g., crash or near crash). However, talking or listening increased risk much less for light vehicles and not at all for trucks. Text messaging on a cell phone was associated with the highest risk of all cell phone related tasks.

CELL PHONE TASK	*Risk of Crash or Near Crash event*
Light Vehicle/Cars	
Dialing Cell Phone	2.8 times as high as non-distracted driving
Talking/Listening to Cell Phone	1.3 times as high as non-distracted driving
Reaching for object (i.e. electronic device and other)	1.4 times as high as non-distracted driving
Heavy Vehicles/Trucks	
Dialing Cell phone	5.9 times as high as non-distracted driving
Talking/Listening to Cell Phone	1.0 times as high as non-distracted driving
Use/Reach for electronic device	6.7 times as high as non-distracted driving
Text messaging	23.2 times as high as non-distracted driving

Explanation of Findings

Eye glance analyses were conducted to assess where drivers were looking while involved in a safety-critical event and performing cell phone tasks. The tasks that draw the driver's eyes away from the forward roadway were those with the highest risk.

Several recent high visibility trucking and transit crashes have been directly linked to texting from a cell phone. VTTI's research showed that text messaging, which had the highest risk of over 20 times worse than driving while not using a phone, also had the longest duration of eyes off road time (4.6 s over a 6-s interval). This equates to a driver traveling the length of a football field at 55 mph without looking at the roadway. Talking/listening to a cell phone allowed drivers to maintain eyes on the road and were not associated with an increased safety risk to nearly the same degree.

Recent results from other researchers using driving simulators suggest that talking and listening is as dangerous as visually distracting cell phone tasks. The results from VTTI's naturalistic driving studies clearly indicate that this is not the case. For example, talking and listening to a cell phone is not nearly as risky as driving while drunk at the legal limit of alcohol. Recent comparisons made in the literature greatly exaggerate the cell phone risk relative to the very serious effects of alcohol use, which increases the risk of a fatal crash approximately seven times that of sober driving. Using simple fatal crash and phone use statistics, if talking on cell phones was as risky as driving while drunk, the number of fatal crashes would have increased roughly 50% in the last decade instead of remaining largely unchanged.

These results show conclusively that a real key to significantly improving safety is **keeping your eyes on the road**. In contrast, "cognitively intense" tasks (e.g., emotional conversations, "books-on-tape", etc.) can have a measurable effect in the laboratory, but the actual driving risks are much lower in comparison.

VTTI's recommendations (based on findings from research studies)

- Driving is a visual task and non-driving activities that draw the driver's eyes away from the roadway, such as texting and dialing, should always be avoided.

- Texting should be banned in moving vehicles for all drivers. As shown in the table, this cell phone task has the potential to create a true crash epidemic if texting-type tasks continue to grow in popularity and the generation of frequent text message senders reach driving age in large numbers.

- "Headset" cell phone use is not substantially safer than "hand-held" use because the primary risk is associated with both tasks is answering, dialing, and other tasks that require your eyes to be off the road. In contrast, "true hands-free" phone use, such as voice activated systems, are less risky if they are designed well enough so the driver does not have to take their eyes off the road often or for long periods.

- All cell phone use should be banned for newly licensed teen drivers. Our research has shown that teens tend to engage in cell phone tasks much more frequently, and in much more risky situations, than adults. Thus, our studies indicate that teens are four times more likely to get into a related crash or near crash event than their adult counterparts.

The Disconnect Between Naturalistic and Simulator Research

It is important to keep in mind that a driving simulator is ***not*** actual driving. Driving simulators engage participants in tracking tasks in a laboratory. As such, researchers that conduct simulator studies must be cautious when suggesting that conclusions based on simulator studies are applicable to actual driving. With the introduction of naturalistic driving studies that record drivers (through continuous

video and kinematic sensors) in actual driving situations, we now have a scientific method to study driver behavior in real-world driving conditions in the presence of real-world daily pressures. As such, if the point of transportation safety research is to understand driver behavior in the real-world (e.g., increase crash risk due to cell phone use), and when conflicting findings occur between naturalistic studies and simulator studies, findings from the real-world, and not the simulator-world, must be considered the gold standard.

It is also critical to note that some results of recent naturalistic driving studies, including those highlighted here as well as others (e.g., Sayer, Devonshire and Flanagan, 2007) are at odds with results obtained from simulator studies. Future research is necessary to explore the reasons why simulator studies sometimes do not reflect studies conducted in actual driving conditions (i.e., the full context of the driving environment). It may be, as Sayer, Devonshire and Flanagan (2007) note, that controlled investigations cannot account for driver choice behavior and risk perception as it actually occurs in real-world driving. If this assessment is accurate, the generalizability of simulator findings, at least in some cases, may be greatly limited outside of the simulated environment.

NOTE: Dr. Rich Hanowski, Director of the Center for Truck and Bus Safety at VTTI, will be presenting the results of his study directed at Driver Distraction in Commercial Motor Vehicle Operations, at the First International Conference on Driver Distraction and Inattention in Gothenburg, Sweden, September 28-29, 2009.

References

Blanco, M., Bocanegra, J.L., Morgan, J.F., Fitch, G.M., Medina, Olson, R.L., Hanowski, R.J., Daily, B., & Zimmermann, R.P. (April, 2009). *Assessment of a Drowsy Driver Warning System for Heavy Vehicle Drivers: Final Report.* Report No. DOT HS 811 117. Washington, DC: National Highway Traffic Safety Administration. http://www.trb.org/news/blurb_detail.asp?id=10451&utm_medium=etmail&utm_source=Transportation%20Research%20Board&utm_campaign=TRB+E-Newsletter+-+05-27-2009&utm_content=Customer&utm_term

Blanco, M., Hickman, J.S. Olson, R.L., Bocanegra, J.L., Hanowski, R.J., Nakata, A., Greening, M., Madison, P., Holbrook, G.T., and Bowman, D. (in press). *Investigating Critical Incidents, Driver Restart Period, Sleep Quantity, and Crash Countermeasures in Commercial Operations Using Naturalistic Data Collection: Final Report* (Contract No. DTFH61-01-C-00049, Task Order # 23). Washington, DC: Federal Motor Carrier Safety Administration.

Dingus, T. A., Klauer, S. G., Neale, V. L., Petersen, A., Lee, S. E., Sudweeks, J., Perez, M. A., Hankey, J., Ramsey, D., Gupta, S., Bucher, C., Doerzaph, Z. R., Jermeland, J., and Knipling, R.R. (2006). *The 100-Car Naturalistic Driving Study: Phase II – Results of the 100-Car Field Experiment.* (Interim Project Report for DTNH22-00-C-07007, Task Order 6; Report No. DOT HS 810 593). Washington, D.C.: National Highway Traffic Safety Administration. http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/NRD/Multimedia/PDFs/Crash%20Avoidance/Driver%20Distraction/100CarMain.pdf

http://www.fmcsa.dot.gov/facts-research/art-webinars-desc.asp?webID=32

Federal Motor Carrier Safety Administration Driving Tips Website: http://www.fmcsa.dot.gov/about/outreach/education/driverTips/index.htm

Hanowski, R.J., Blanco, M., Nakata, A., Hickman, J.S., Schaudt, W.A., Fumero, M.C., Olson, R.L., Jermeland, J., Greening, M., Holbrook, G.T., Knipling, R.R., & Madison, P. (September, 2008). *The drowsy driver warning system field operational test, data collection methods final report.* Report No. DOT HS 810 035. Washington, DC: National Highway Traffic Safety Administration. URL:http://nhtsa.com/staticfiles/DOT/NHTSA/NRD/Multimedia/PDFs/Crash%20Avoidance/2008/810035.pdf

Hanowski, R.J., Olson, R.L., Hickman, J.S., and Bocanegra, J. (in press). Driver distraction in commercial vehicle operations. Paper to be presented at the First International Conference on Driver Distraction and Inattention in Gothenburg, Sweden, September 28-29, 2009 (http://www.chalmers.se/safer/driverdistraction-en) .

Klauer, S. G., Dingus, T. A., Neale, V. L., Sudweeks, J.D., and Ramsey, D. J. (2006). The Impact on Driver Inattention on Near Crash/Crash Risk: An Analysis Using the 100 Car Naturalistic Driving Study Data (Report No. DOT HS 810 594). Washington, DC: National Highway Traffic Safety Administration. http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/NRD/Multimedia/PDFs/Crash%20Avoidance/Driver%20Distraction/810594.pdf

Sayer, J. R, Devonshire, J. M., and Flanagan, C. A. (2007). Naturalistic driving performance during secondary tasks. Proceedings of the Fourth International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design. http://ppc.uiowa.edu/driving-assessment/2007/proceedings/papers/039_SayerDevonshire.pdf

Appendix D

AUSTRALIAN LOCAL GOVERNMENT ASSOCIATION

Anthony Albanese
Minister for Infrastructure
and Transport

AMTA
Australian Mobile Telecommunications Association

JOINT MEDIA RELEASE

24 December 2010

Take responsibility this Christmas when driving

The Australian Government has joined forces with two of the country's leading racing car drivers as well as the local government sector and the mobile phone industry to urge drivers to take care over the Christmas-New Year holiday period.

Federal Transport Minister Anthony Albanese had a simple message for all motorists: the safety of you and your family is in your hands so take your time and focus on arriving at your destination safely.

"All of us need to take greater personal responsibility when behind the wheel. This fact was borne out in the research I released earlier this year which found that while Australians are well-informed about the issue of road safety, the personal conduct of many leaves a lot to be desired.

"Indeed, a quarter of motorists consider it acceptable to speed if they are 'driving safely', almost one in six had dozed off at the wheel at least once, and two-thirds admitted to using their mobile phone while driving."

The Australian Local Government Association (ALGA) urges drivers this Christmas to take regular breaks on long trips, slow down and not to drink and drive.

ALGA President, Cr Genia McCaffery, said: "Roads safety is an issue for everyone in the community. Remember a happy Christmas is a safe Christmas.

"Speeding, fatigue and driving while under the influence of drugs and alcohol are the biggest causes of death and serious injury on our roads, with safety risks heightened during holiday periods like Christmas.

"So that all road users can go home safely to their families, it's important that drivers take regular breaks on long trips and share the driving if possible to combat fatigue and plan your trip and allow plenty of time to get to your destination without speeding to help keep you, your passengers and others safe on the road.

"And always remember, if you're planning on having a drink or two, organise a designated driver or take a taxi or public transport."

The Australian Mobile Telecommunications Association (AMTA) warned drivers about distractions, including mobile phone use while behind the wheel.

AMTA Chief Executive Officer, Chris Althaus, said drivers must take care when using legal hands-free mobiles because it was not appropriate to use them when road conditions were dangerous, in heavy traffic or to get involved in complex and emotional conversations.

But there was one situation- texting- when mobile use was never acceptable under any circumstances, warned V8 supercar champion and TeamVodafone driver, Jamie Whincup.

“Texting is not only illegal, it’s very dangerous. Recent research shows that texting is as dangerous as drink driving,” he said. “Driving, whether on the race track, on a suburban street or a highway, demands all of our attention and eyes on the road.”

Fellow TeamVodafone driver and V8 champion Craig Lowndes said: “Do not text and drive. Wait until you arrive. Nothing can be so important to risk your life and others by texting. Let’s all make safety our most important call this Christmas.”

AMTA’s safety tips for mobile use and driving can be viewed here.

Contact: 

Appendix E

HOW TO REDUCE THE RISK USING YOUR MOBILE WHEN DRIVING

Drivers can take some simple steps to reduce the risks:

Never Text – it's very dangerous and illegal

Texting drivers take their eyes off the road for 4.6 seconds over a 6 second interval. This means that at 60kph a driver is not watching the road for 75 metres or half the length of the MCG!

Always keep your eyes on the road

The clear lesson from the latest research is that keeping your eyes on the road is critical to reducing driving risks from mobile phone use. Talking and listening are not too dangerous in light traffic and good driving conditions, but taking your eyes off the road to dial or answer a mobile is risky.

Reduce the risks of mobile phone use, avoid fines, and follow the law:

Buy and install a cradle and Bluetooth Hands-free kit

Buy, install, and use a cradle for your phone

The Australian Road Rules require drivers to place their mobiles in approved cradles affixed to the dashboard so they are looking at the road ahead and not glancing down. Drivers can also use a Bluetooth provided they do not touch the handset. Study the road rules for hands-free mobile use in your State or Territory.

Use your smartphone's features

Smartphones provide voice-activated dialling and automatic answering features to reduce the effort of making and receiving a call and allow drivers' eyes to remain on the road at all times. You can also install apps that limit a phone to calling and voice activation. Smart drivers use their handsets' technology to reduce driving distractions.

Don't always answer your phone

Hands-free mobiles in cars are legal in all States and Territories. However, this does not mean it's appropriate for drivers to use them at all times. Drivers should not make calls in heavy traffic, at intersections or in bad weather or poor road conditions. If a call is unnecessary or you consider it unsafe to answer at the time, don't answer the call. Let it divert to voicemail or an answering service.

For further information, contact us at 555-543-5432 or on the web at

www.yourwebsitehere.com

KEEP YOUR EYES ON THE ROAD

How to reduce risk when driving and using a mobile phone

AMTA

Australian Mobile Telecommunications Association

KEEP YOUR EYES ON THE ROAD

Driving is a complex task that requires all your focus to minimise potentially dangerous distractions.

Drivers face a range of distractions when behind the wheel, such as: interacting with mobile phones; iPods and navigation devices; looking and reaching for objects; reading maps and newspapers; looking at signs and billboards; adjusting radios and CD players; noisy children; passengers; and eating and drinking.

The key to safe driving is managing and reducing all potential driver distractions.

One of the most common driver distractions is mobile phone use. However, drivers need to be aware of and know how to reduce the impact of all distractions they face.

Recent research based on real world driving conditions has found that the key to reducing accidents from distractions is to **keep your eyes on the road.**

JUST HOW RISKY ARE MOBILE PHONES WHILE DRIVING?

TEXTING

Recent international research using sophisticated in-car cameras, eye trackers, and sensors shows that texting is very dangerous. This also applies to reading emails and engaging in social media.

Drivers taking their eyes off the road to write or read text messages have up to a 23 times greater risk of crashing or having to take evasive action to avoid a crash.

DIALLING

The research, which involved nearly 3 million kilometres or 43,000 hours of real-life driving data, found that looking down to dial a handheld mobile phone substantially increases the risk of drivers having a crash or near crash by 2.8 times.

Reaching for a moving object, such as a mobile phone, increased the risk of a crash or near crash by 8.8 times.

NOVICE

Some risks were much higher for inexperienced novice drivers who were six times more likely to crash or near crash when dialling.

They were also more than three times at risk when texting or looking at the internet on their phones.

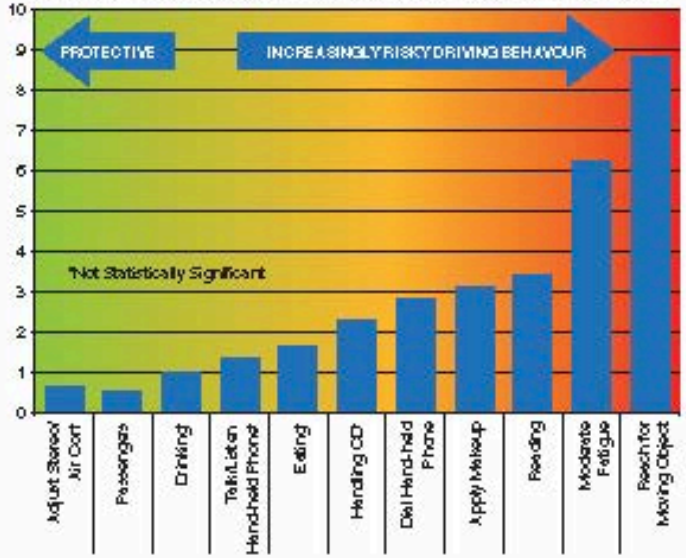
Novice drivers are also at four times the risk of a crash overall which further increases the risk of dialling and texting.

WHAT TO DO

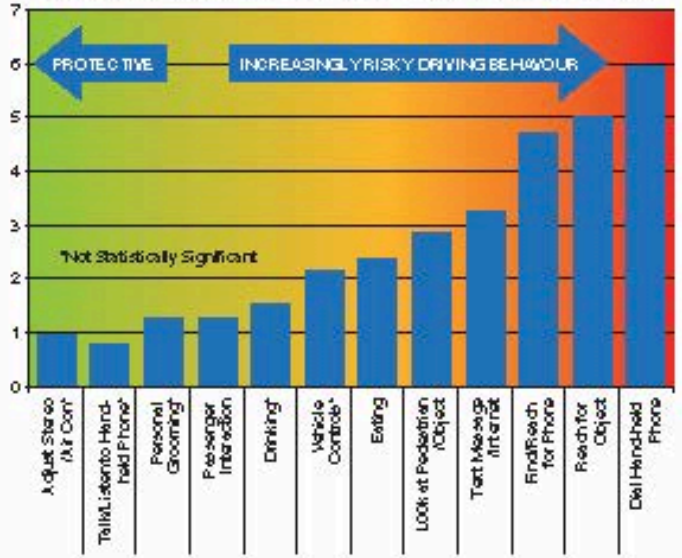
Reaching for moving items, such as mobile phones, dialling and texting are all much riskier tasks than talking on or listening to a mobile phone call.

Therefore, the most effective action you can take to reduce the risks is to put your mobile phone in a cradle or use a Bluetooth hands-free kit to make calls when driving. Use single button dialling functions or voice activated calling so you can keep your eyes on the road ahead.

Relative Risk Estimate for Crash or Near Crash - Adult Drivers



Relative Risk Estimate for Crash or Near Crash - Teen Drivers



The information in these graphs is based on an address by Dr T Dingus, VTTI, to the Australasian College of Road Safety, Melbourne, September 2011.